

FIG. 3A

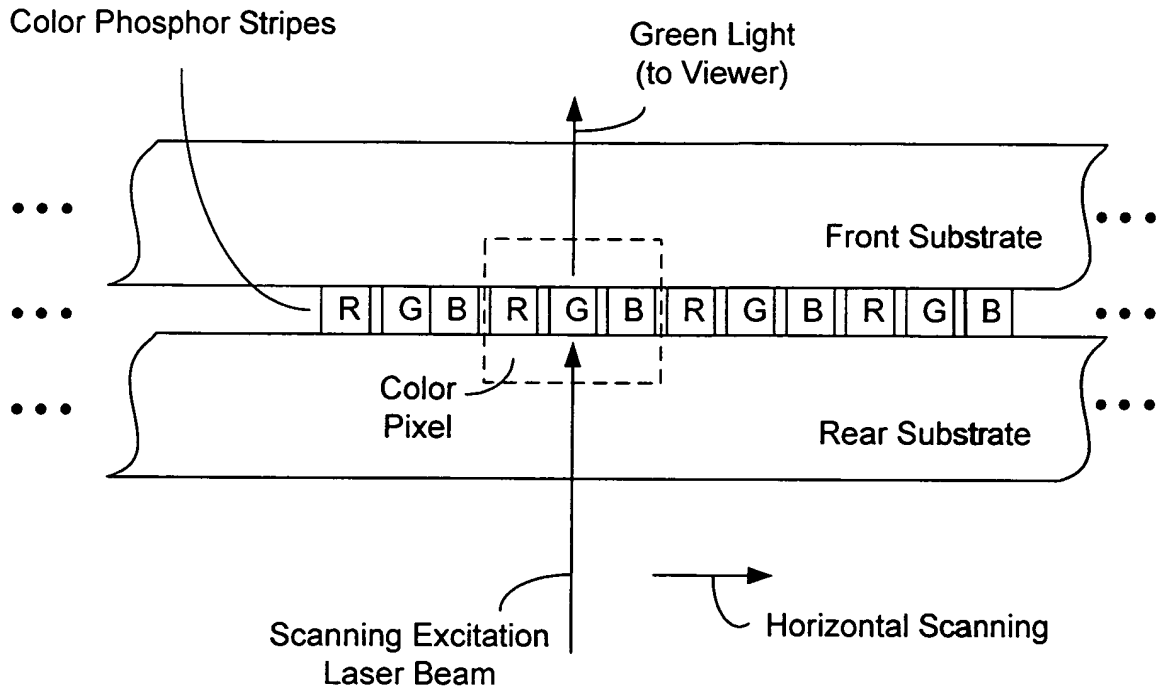


FIG. 3B

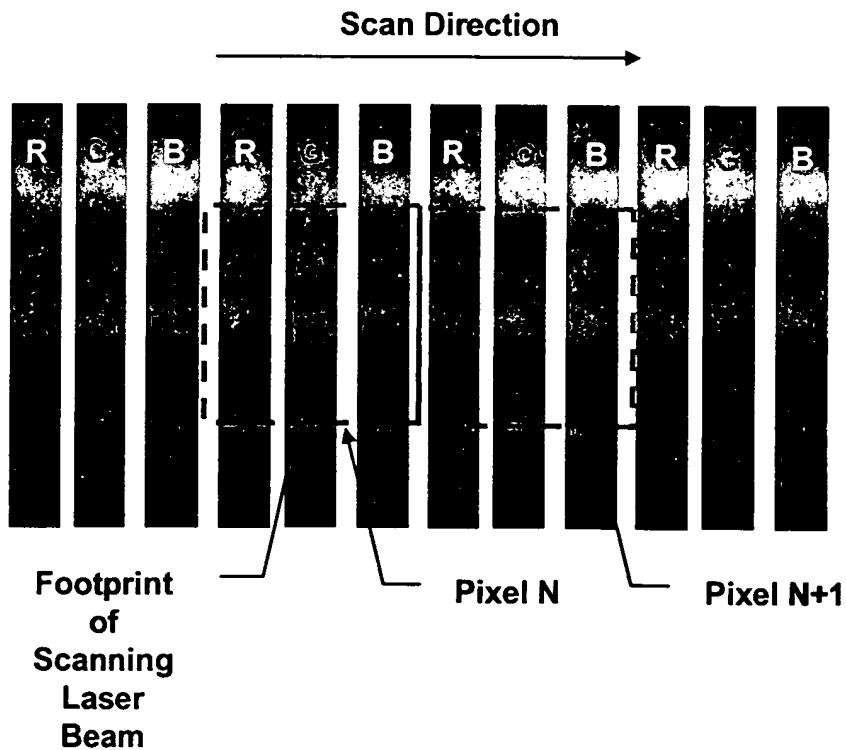


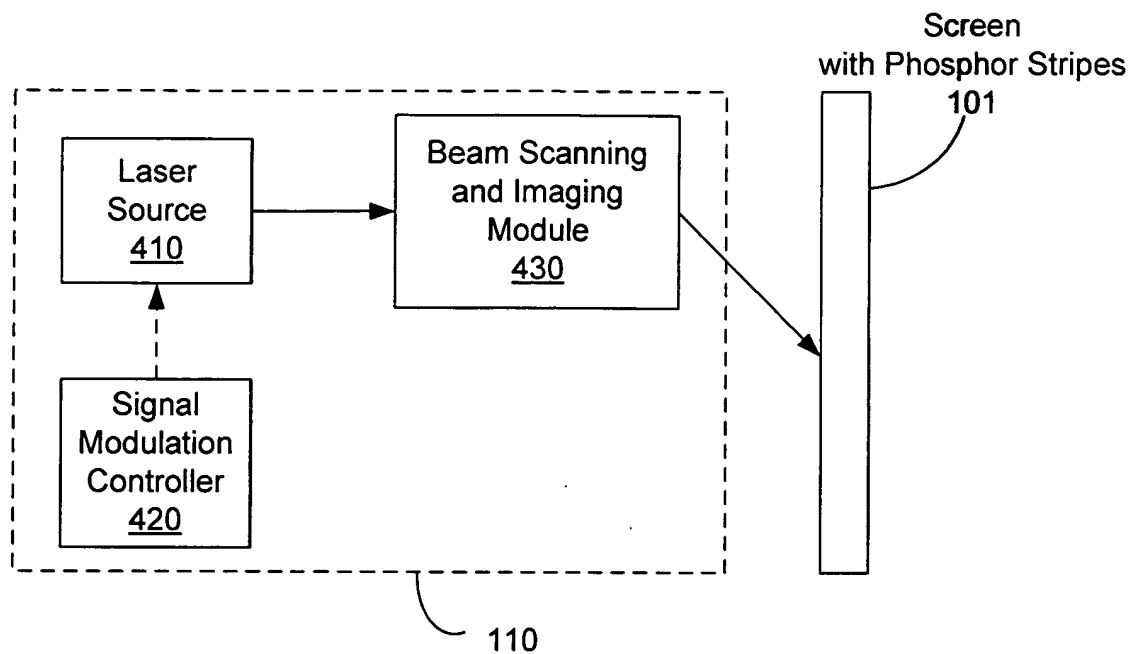
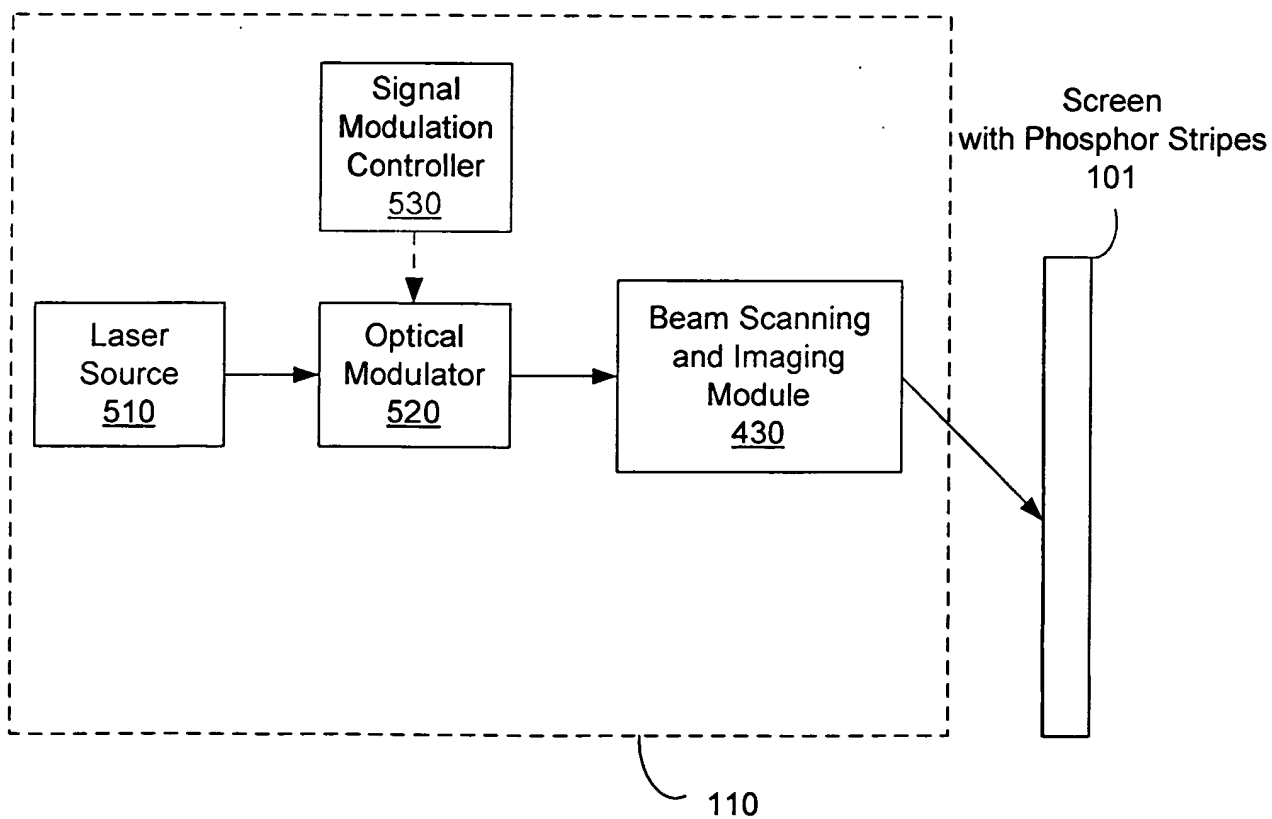
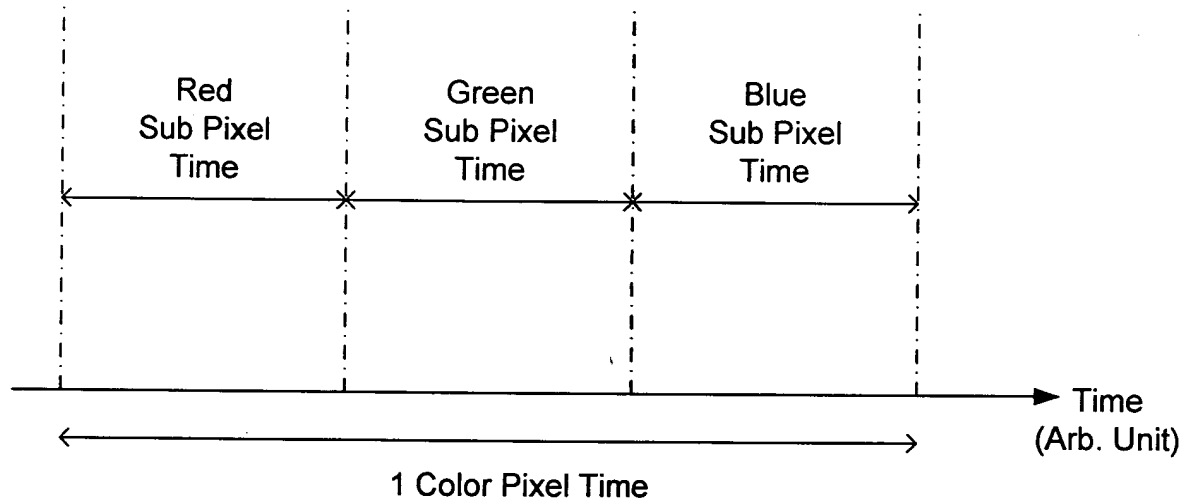
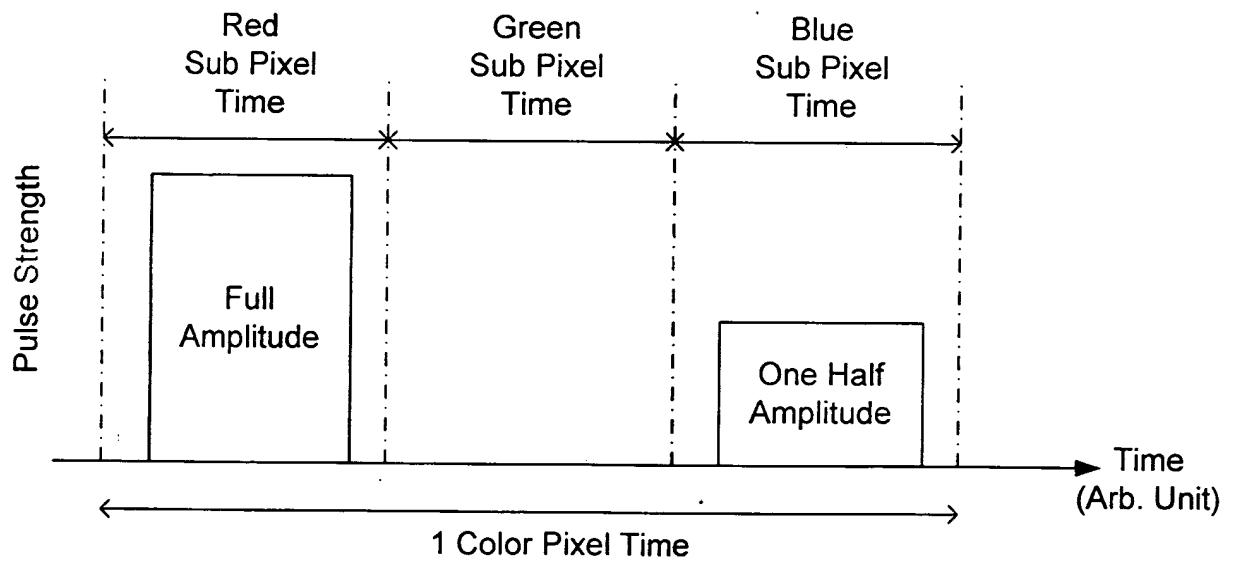
FIG. 4**FIG. 5**

FIG. 6**FIG. 7**

Applicant(s): David Kent; Phillip H. Malyak; Roger A. Hajjar;
 Patrick Tan; David Kindler;
 DISPLAY SYSTEMS HAVING SCREENS WITH OPTICAL
 FLUORESCENT MATERIALS

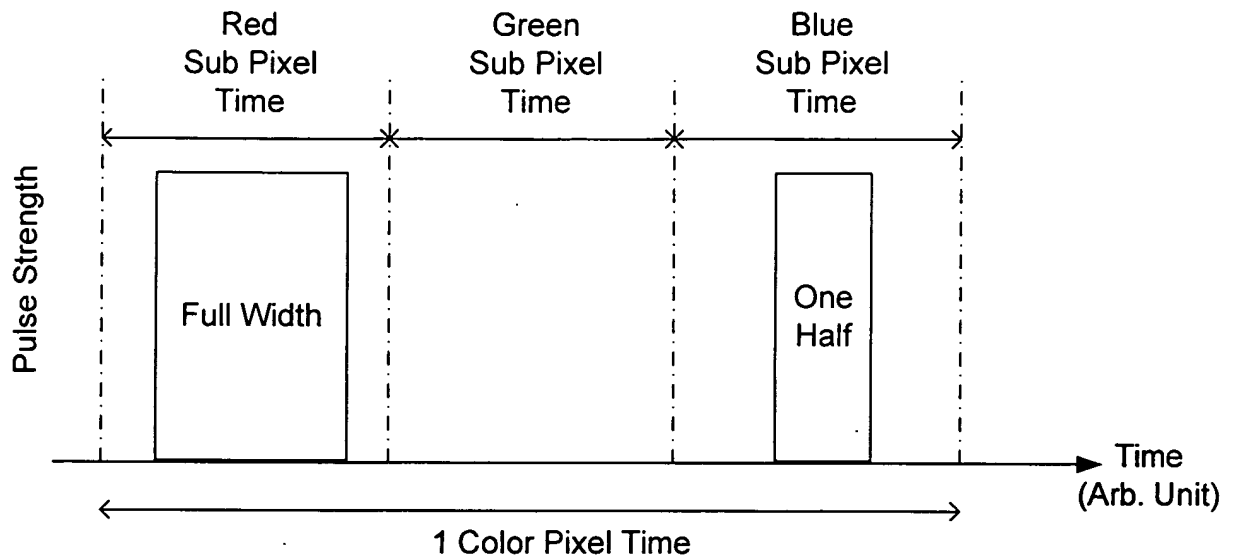
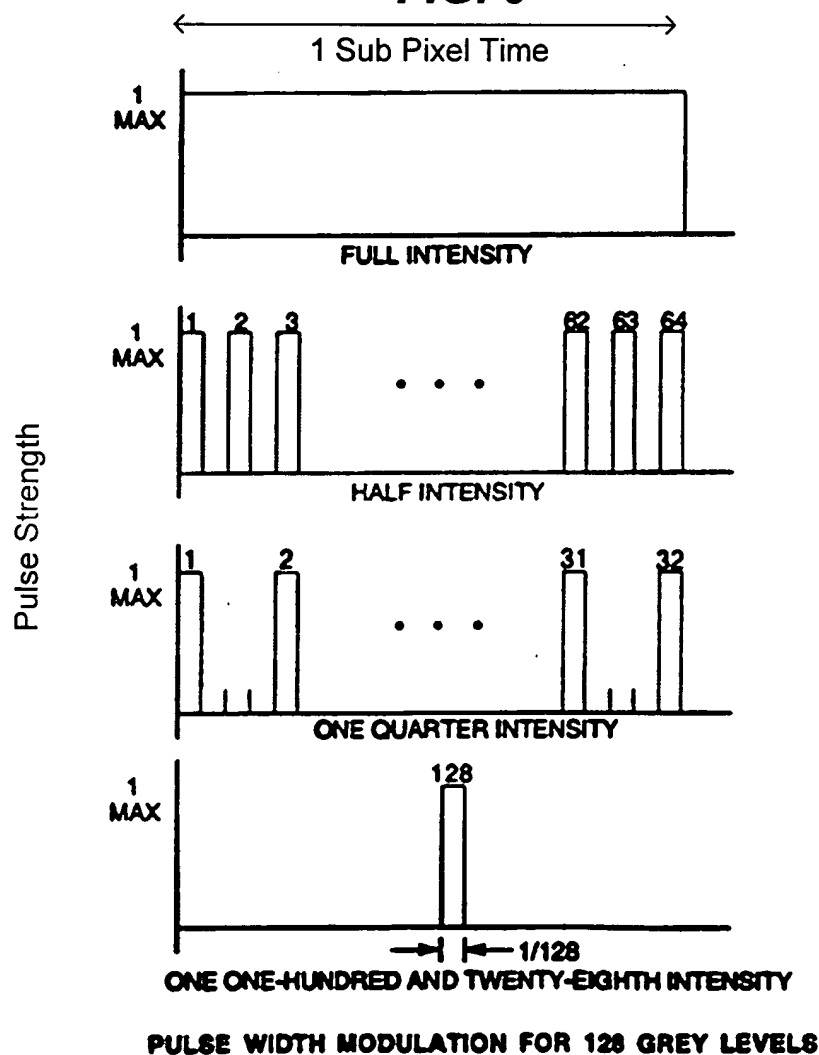
FIG. 8**FIG. 9**

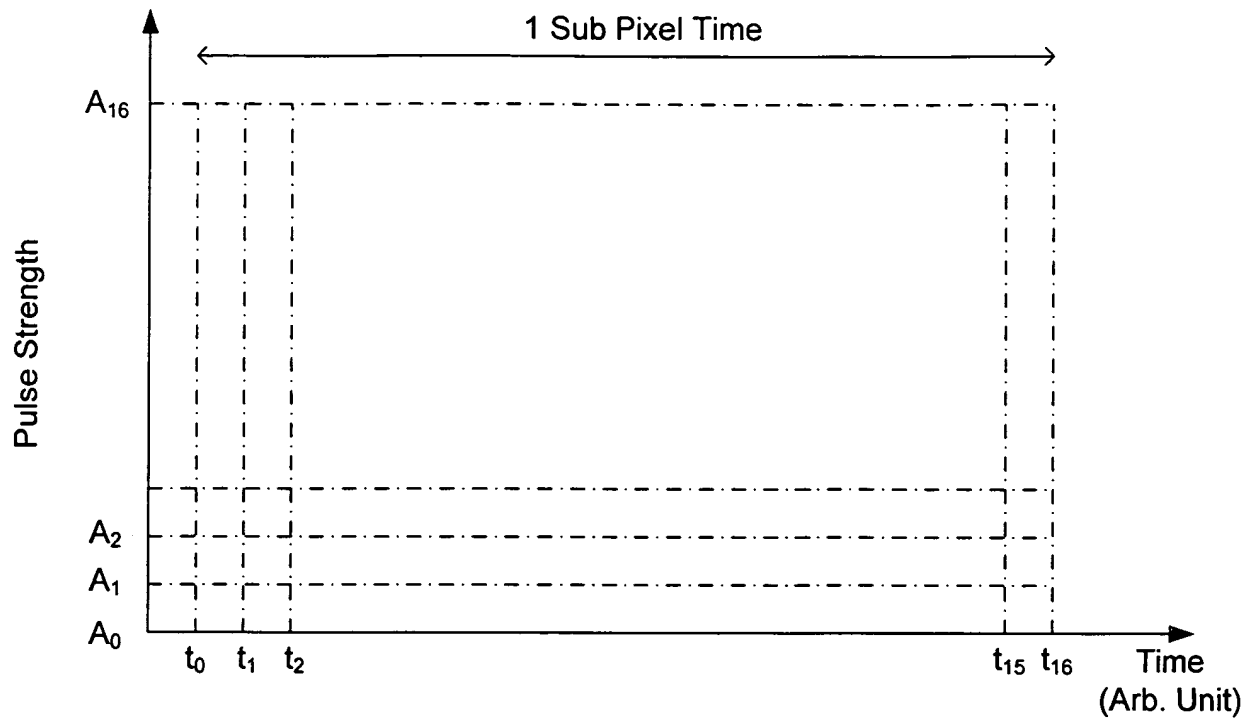
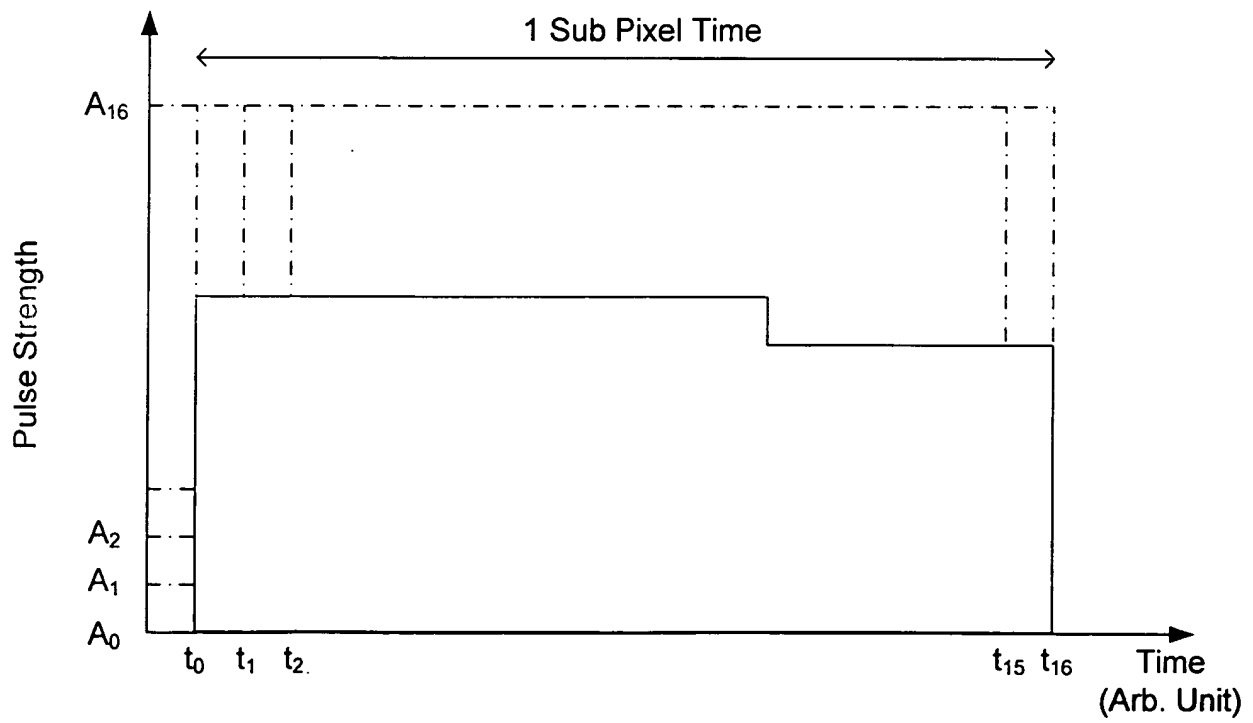
FIG. 10A**FIG. 10B**

FIG. 11

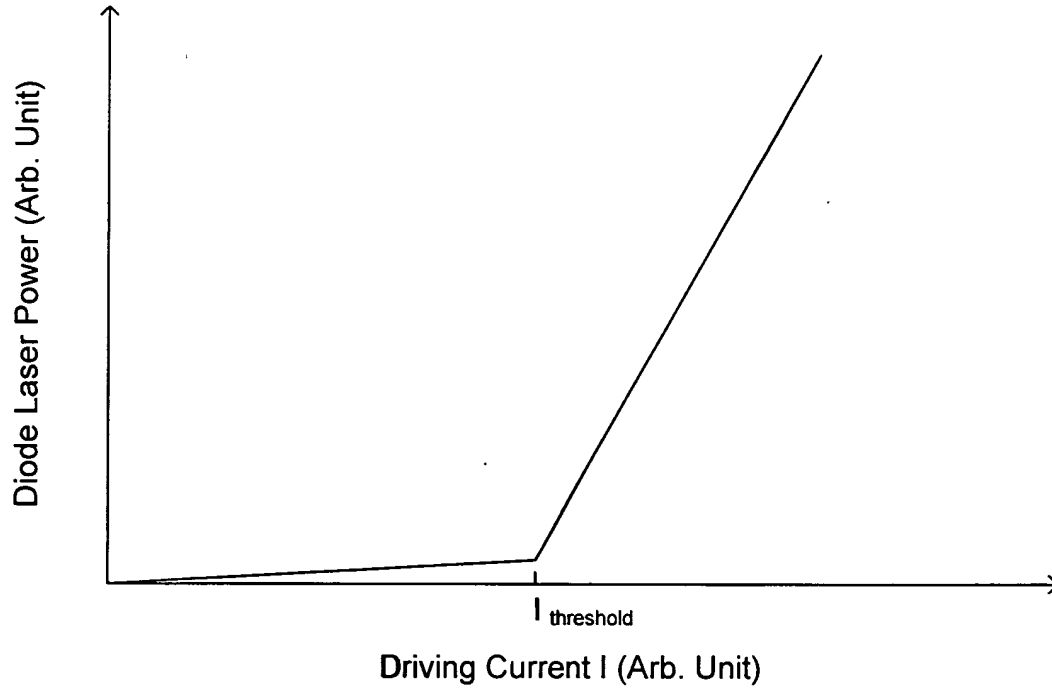


FIG. 12

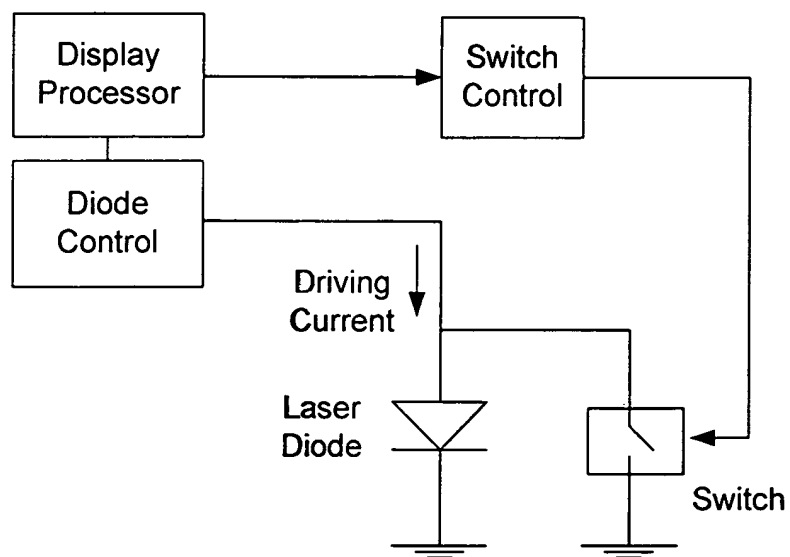


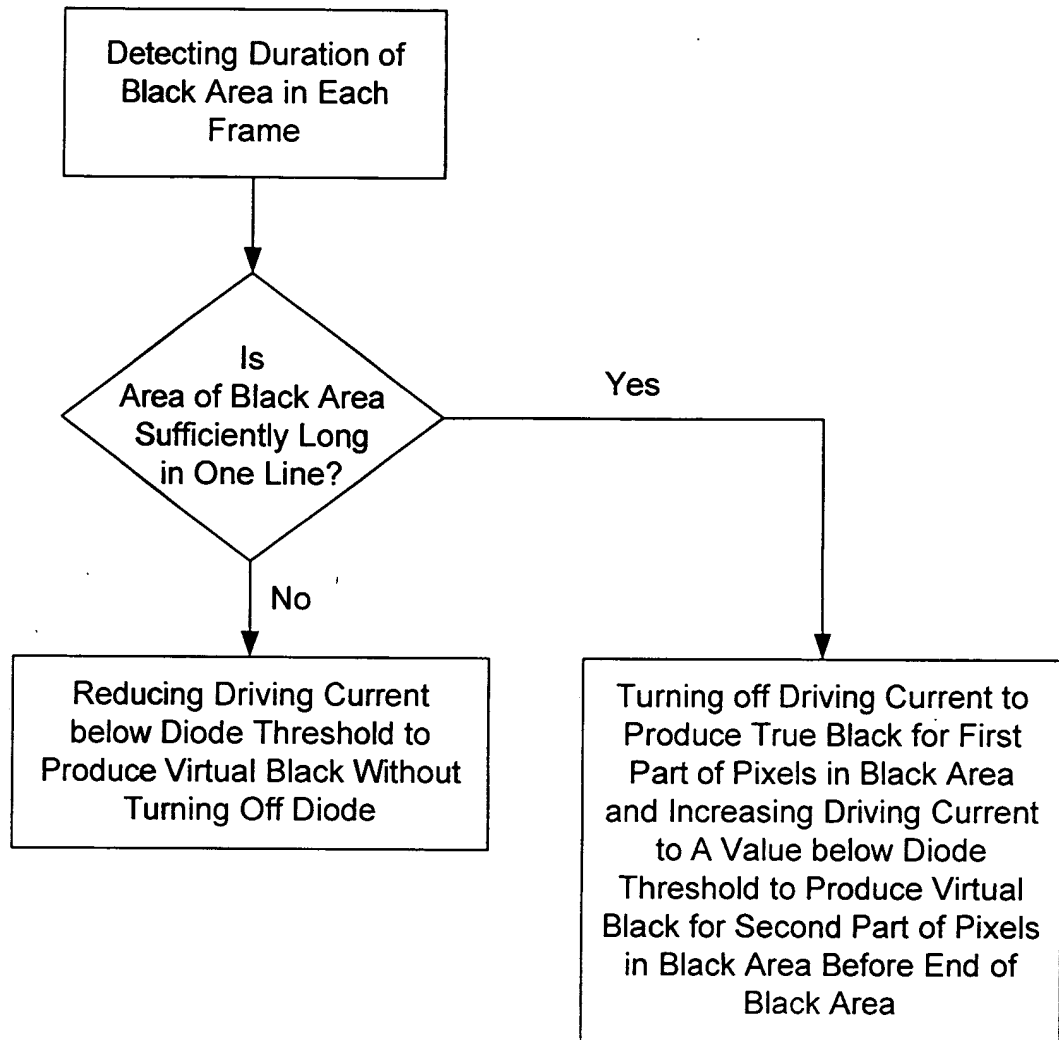
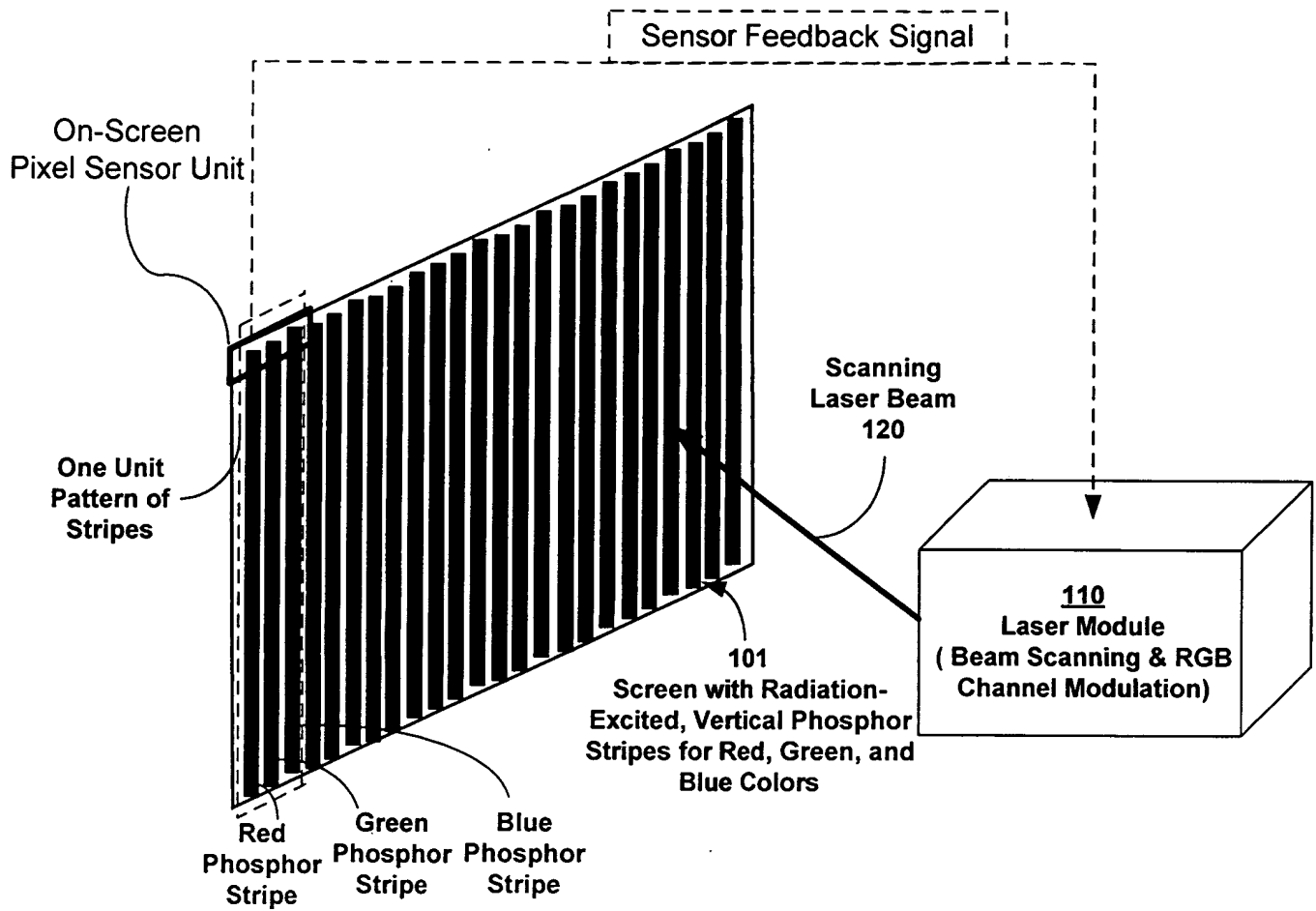
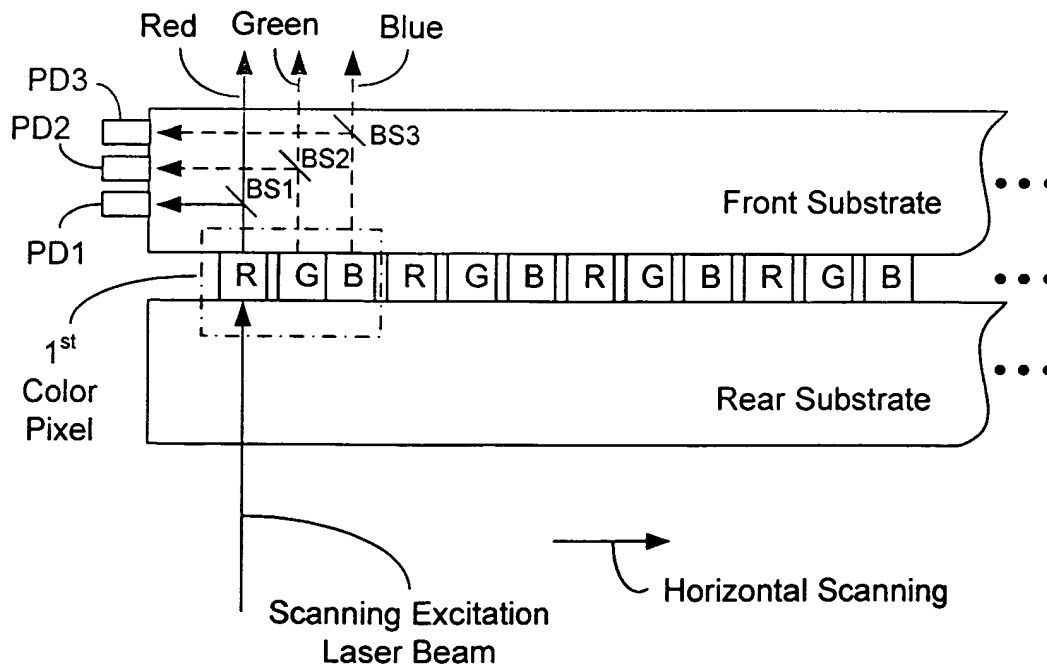
FIG. 13

FIG. 14**FIG. 14A**

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Patrick Tan; David Kindler;
DISPLAY SYSTEMS HAVING SCREENS WITH OPTICAL
FLUORESCENT MATERIALS

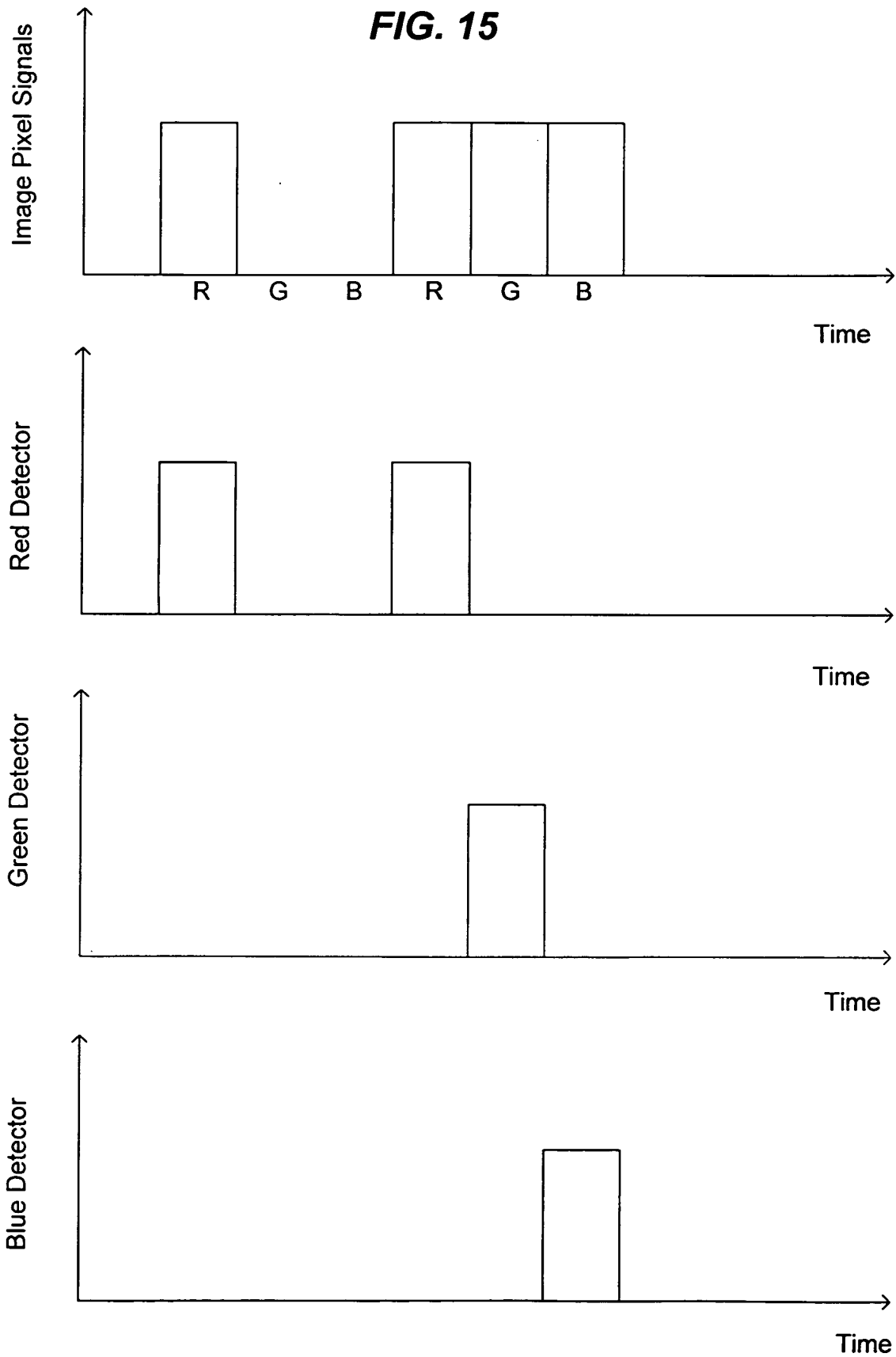
FIG. 15

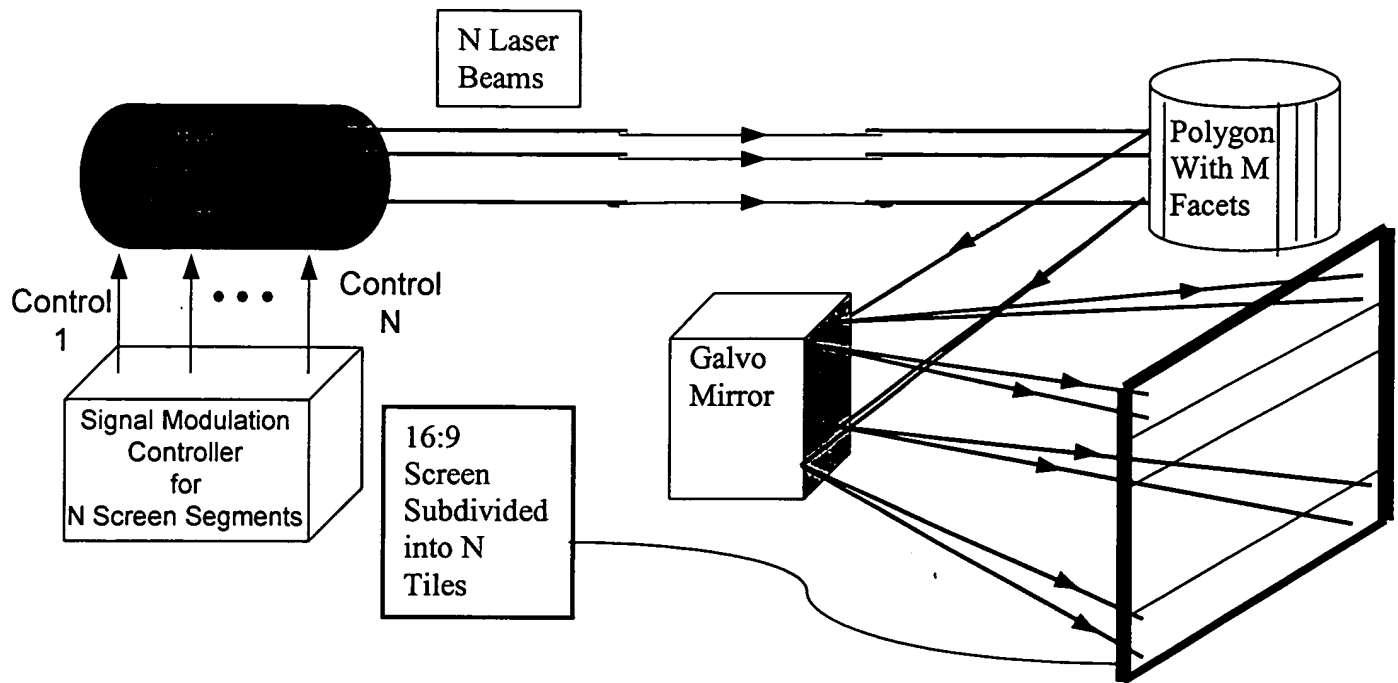
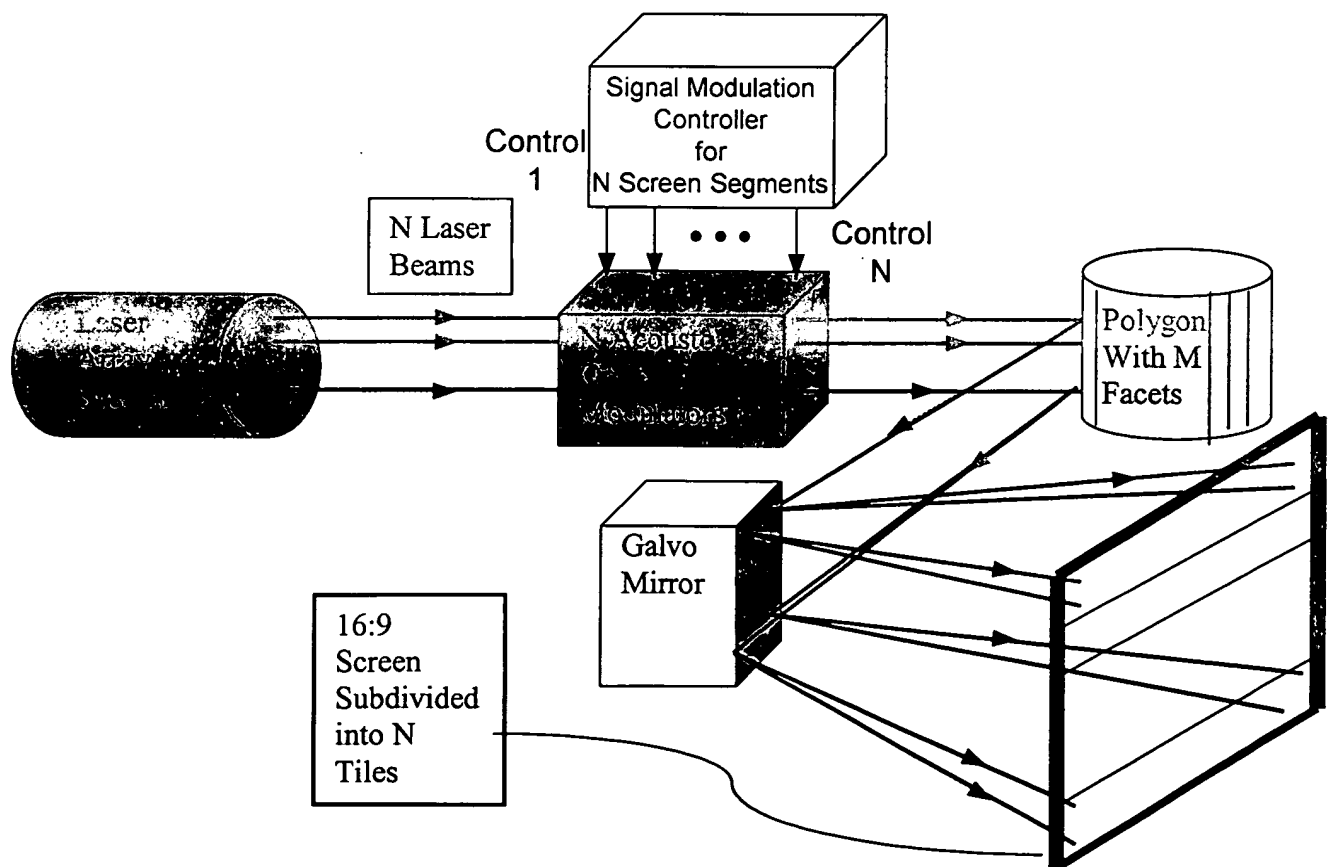
FIG. 16**FIG. 17**

FIG. 18

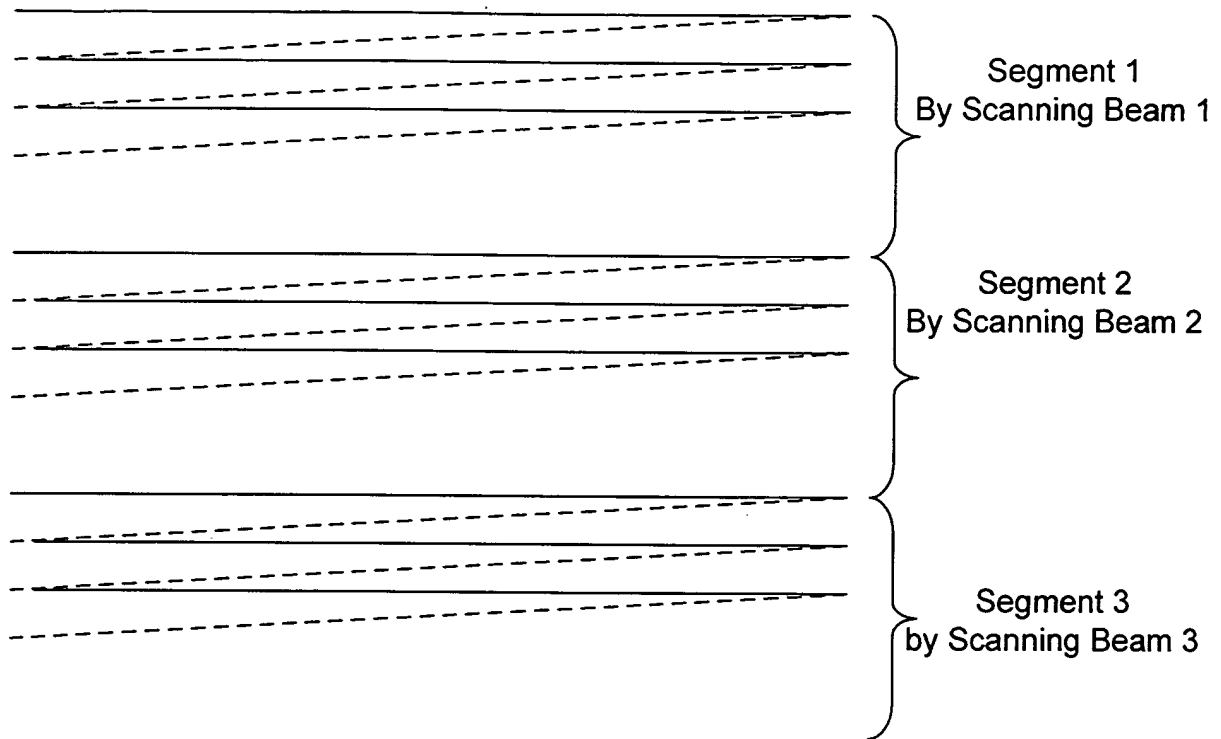


FIG. 19

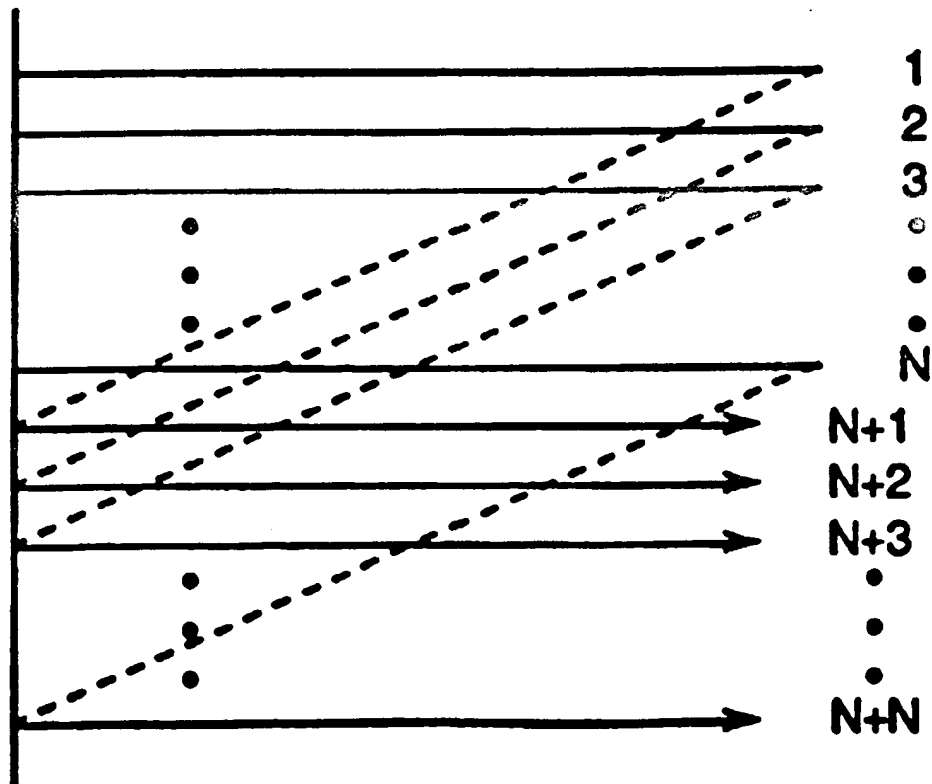


FIG. 20A

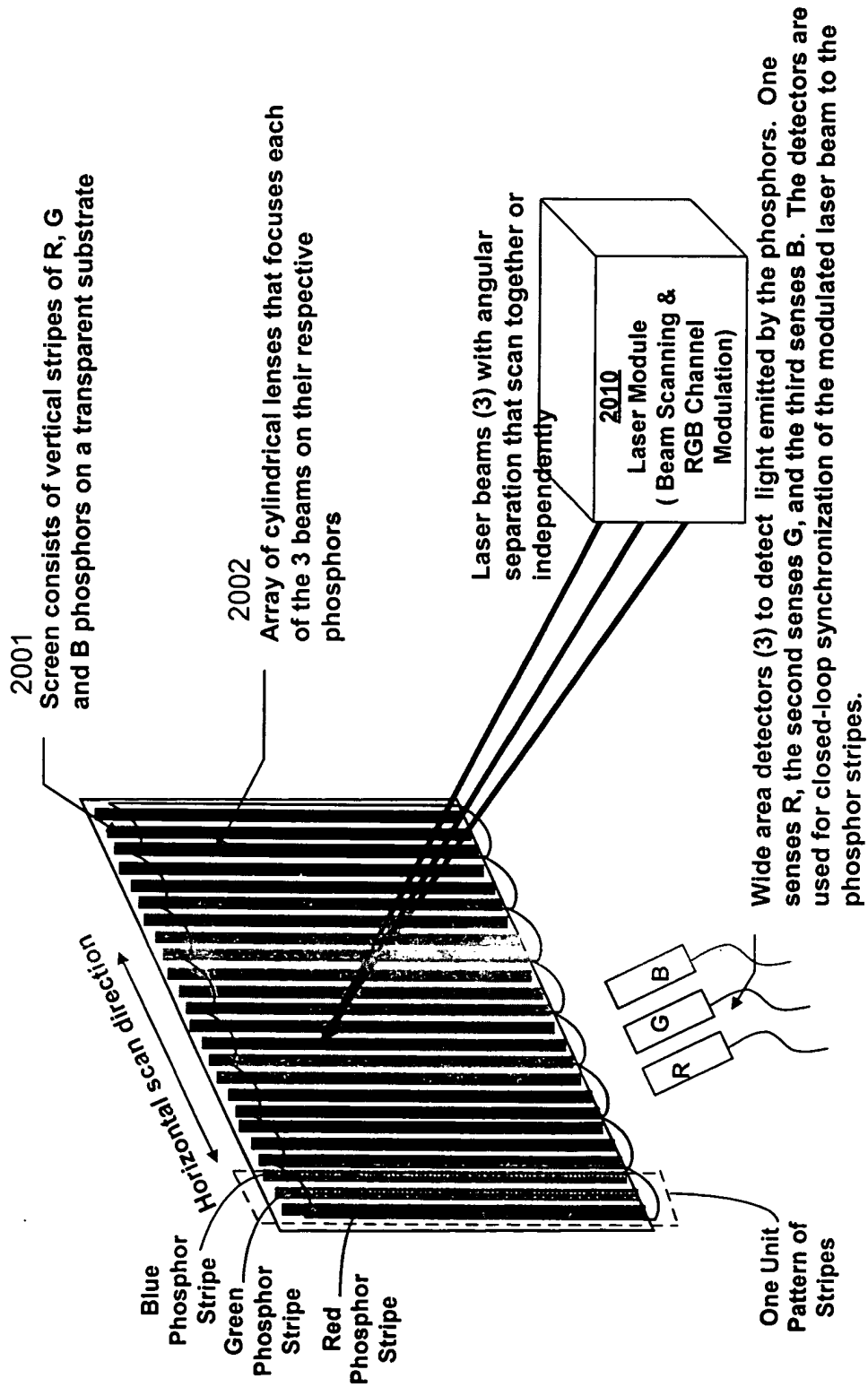
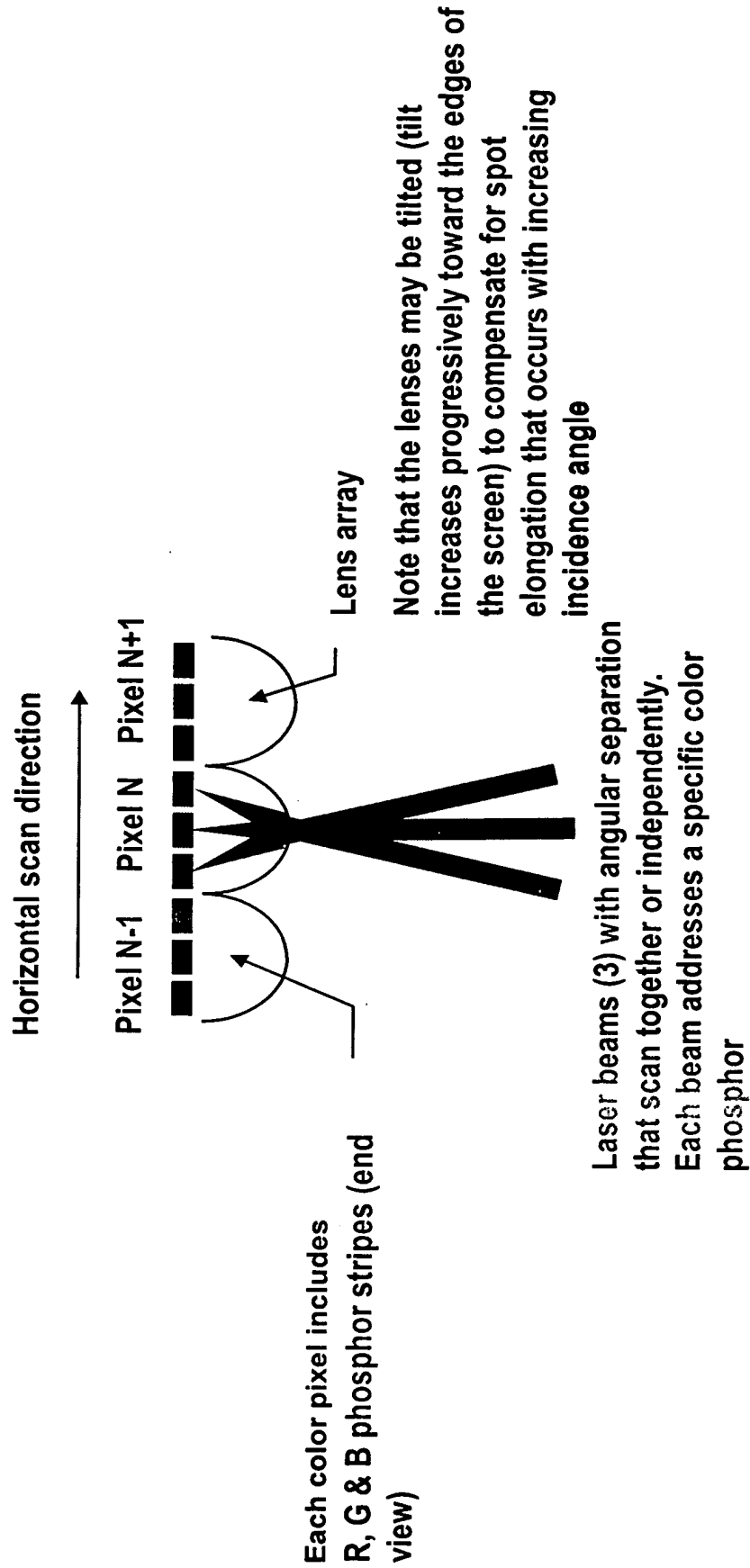


FIG. 20B

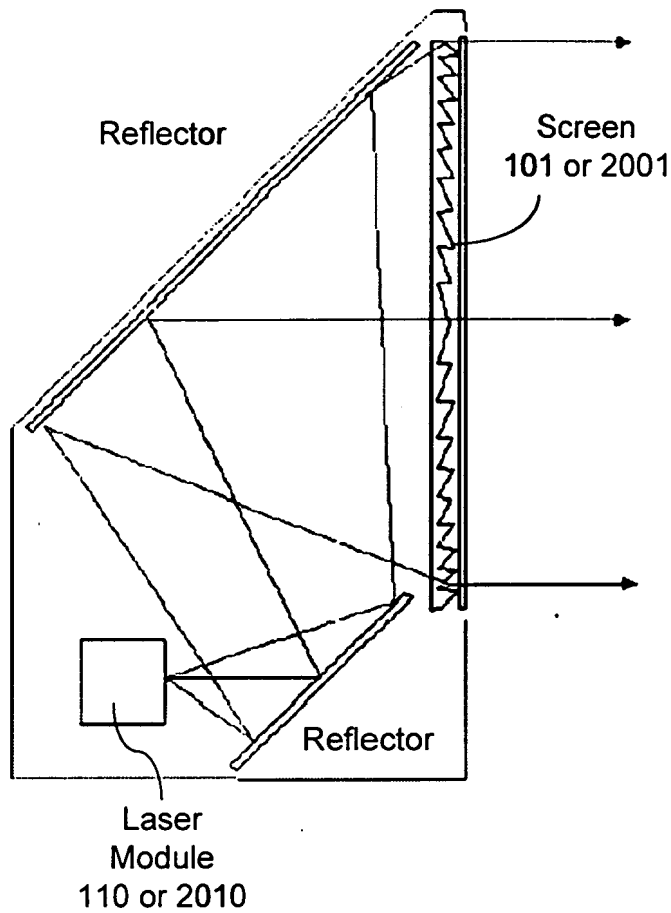
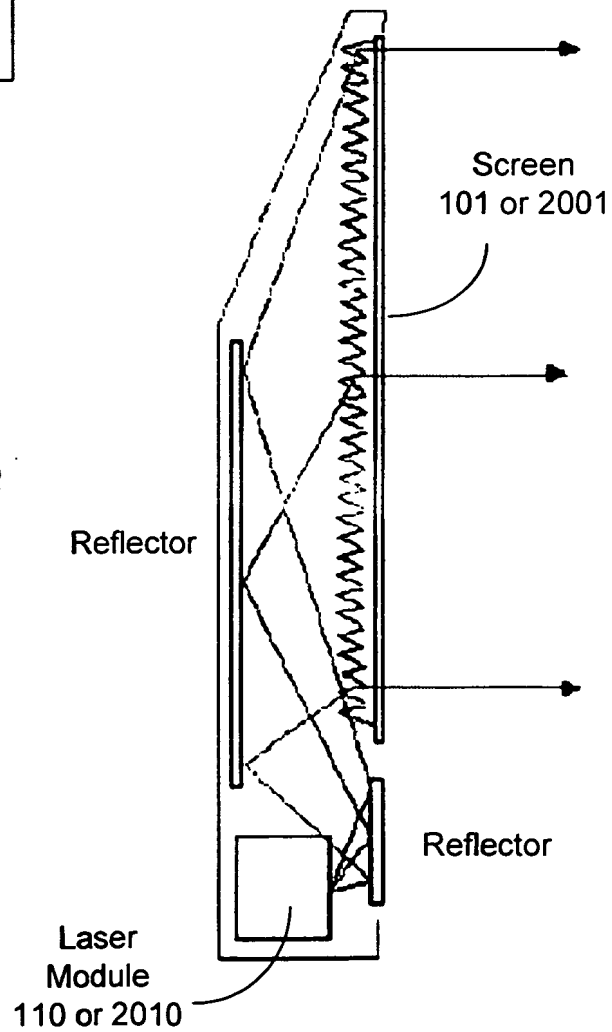
**FIG. 21A****FIG. 21B**

FIG. 22

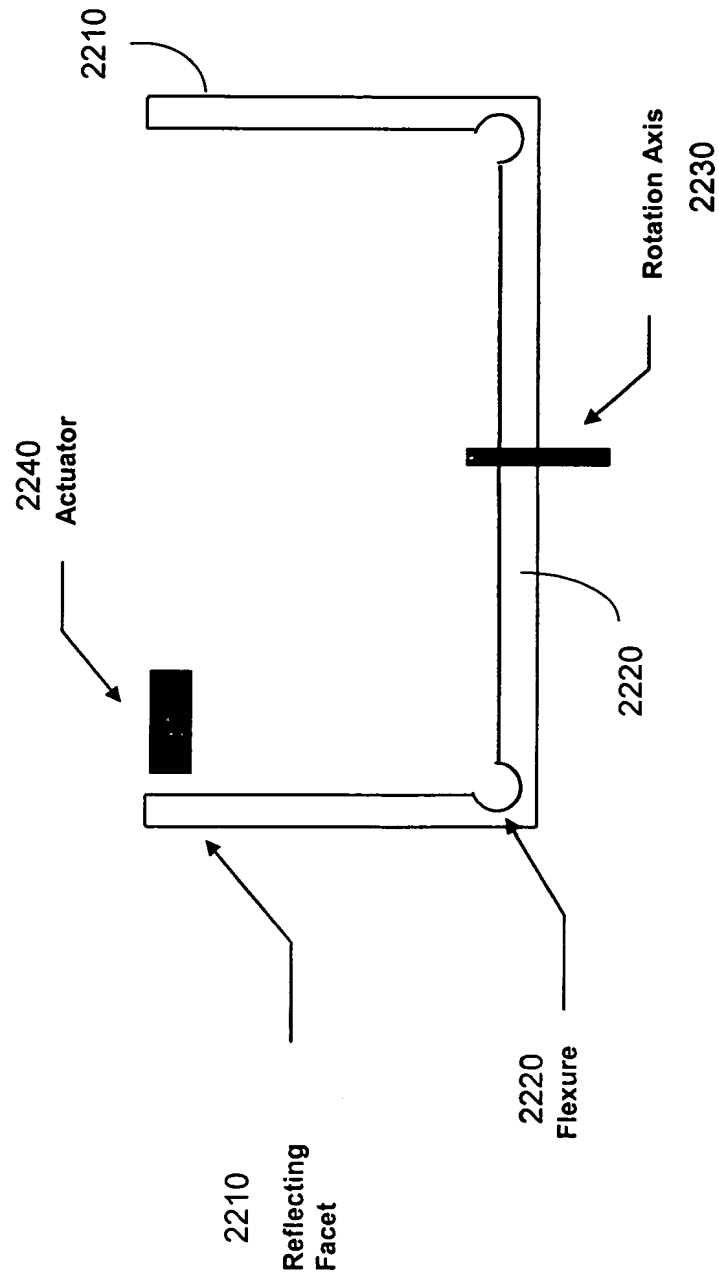


FIG. 23

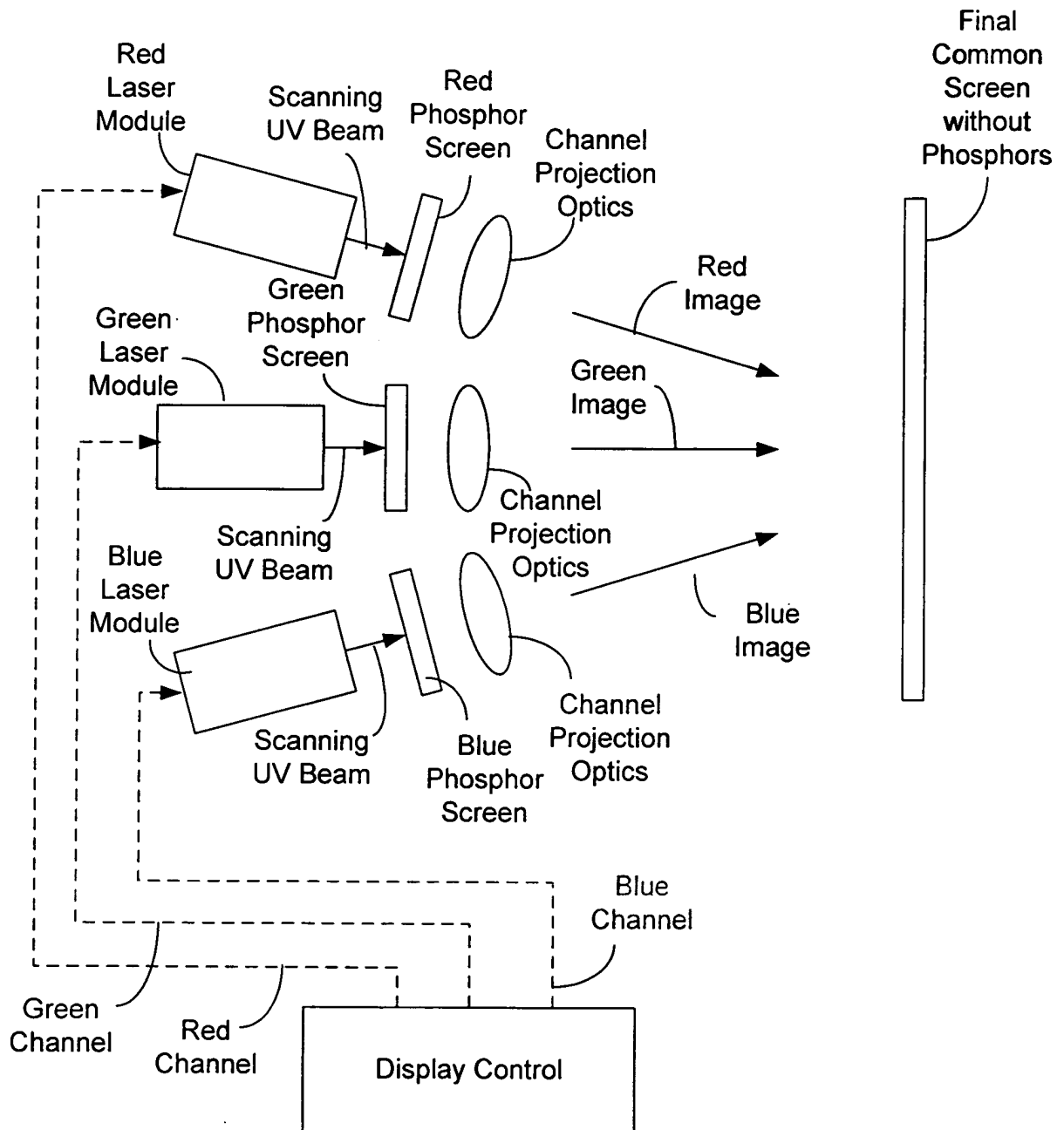


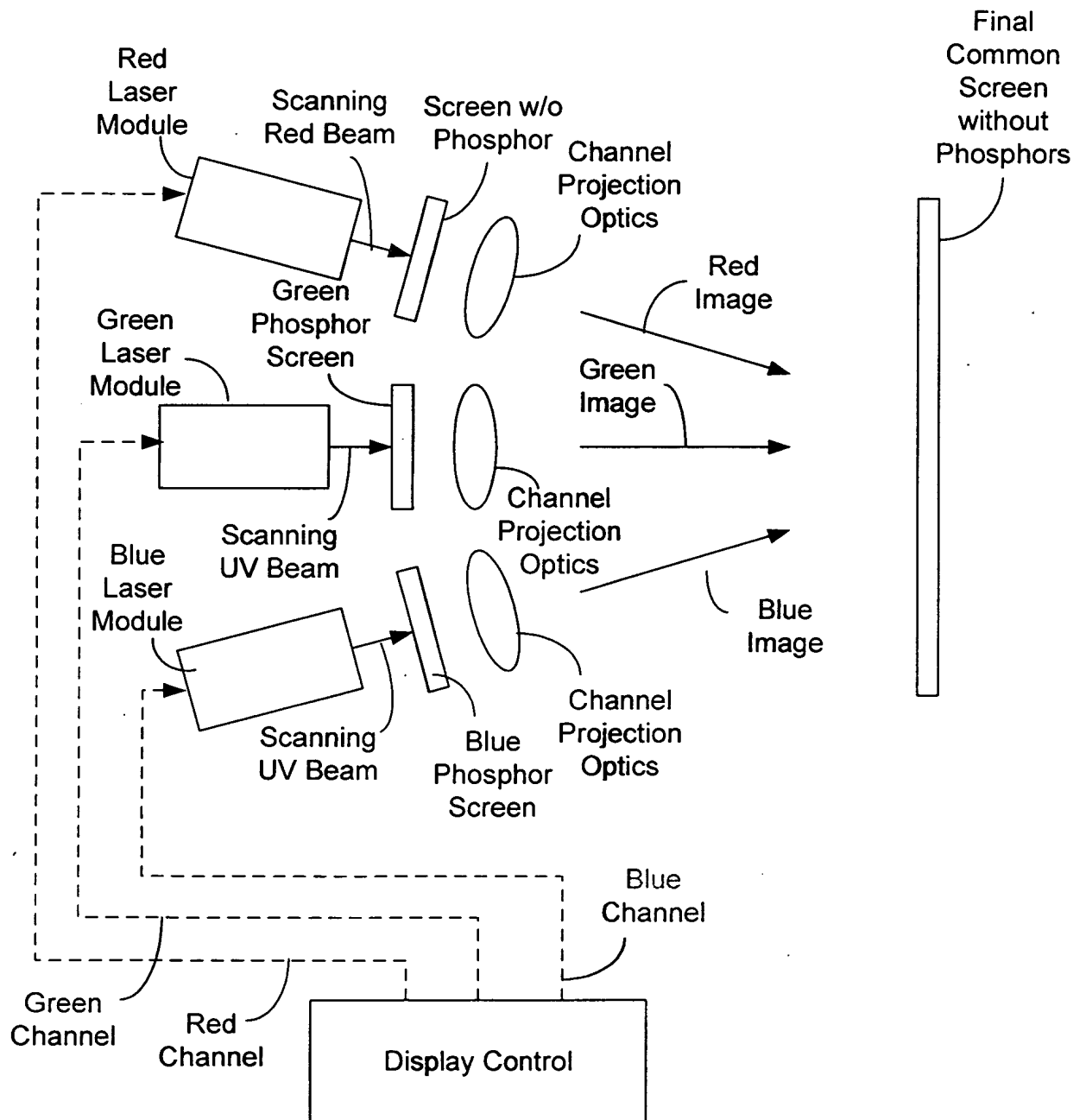
FIG. 24A

FIG. 24B

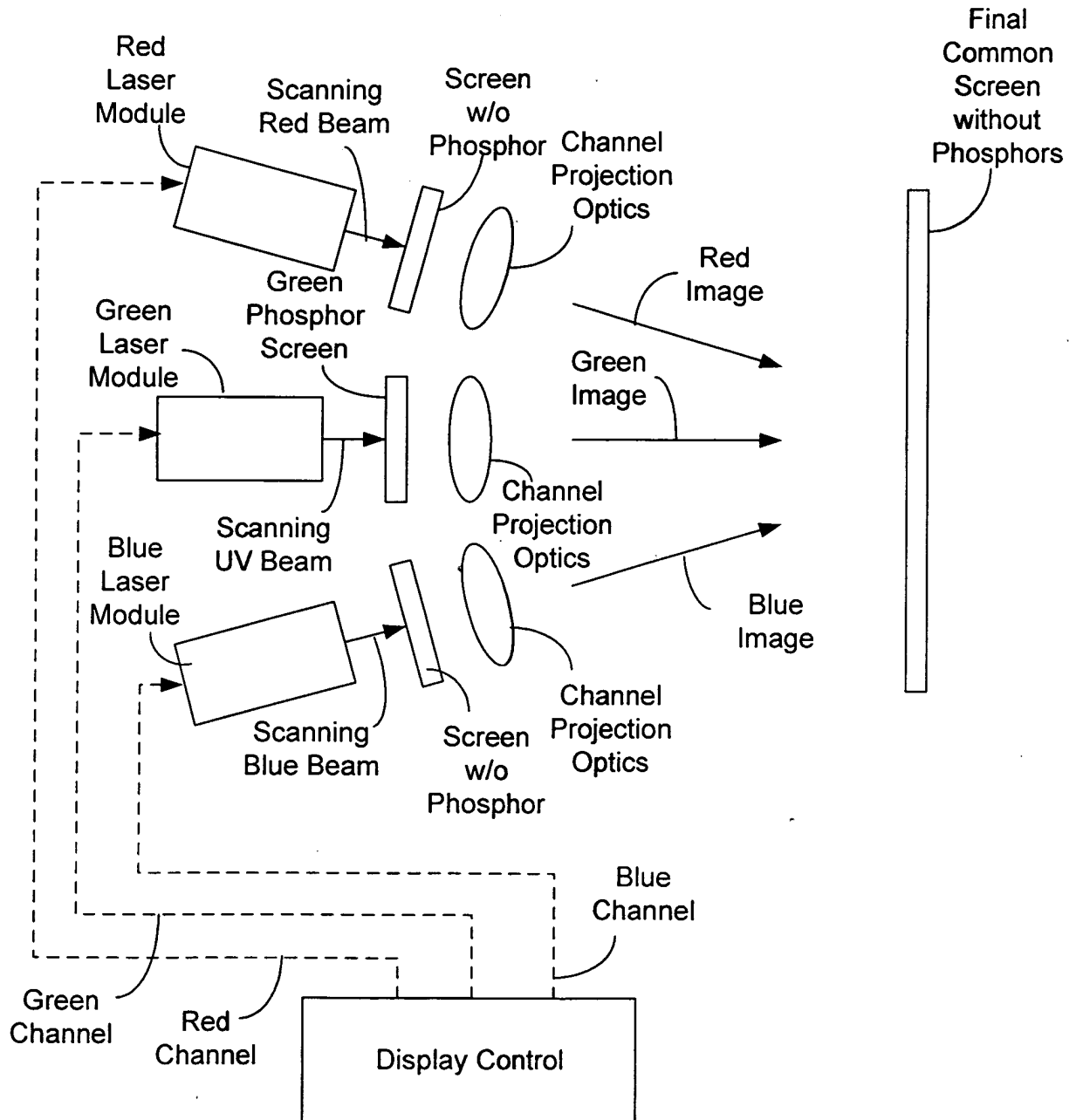


FIG. 25A

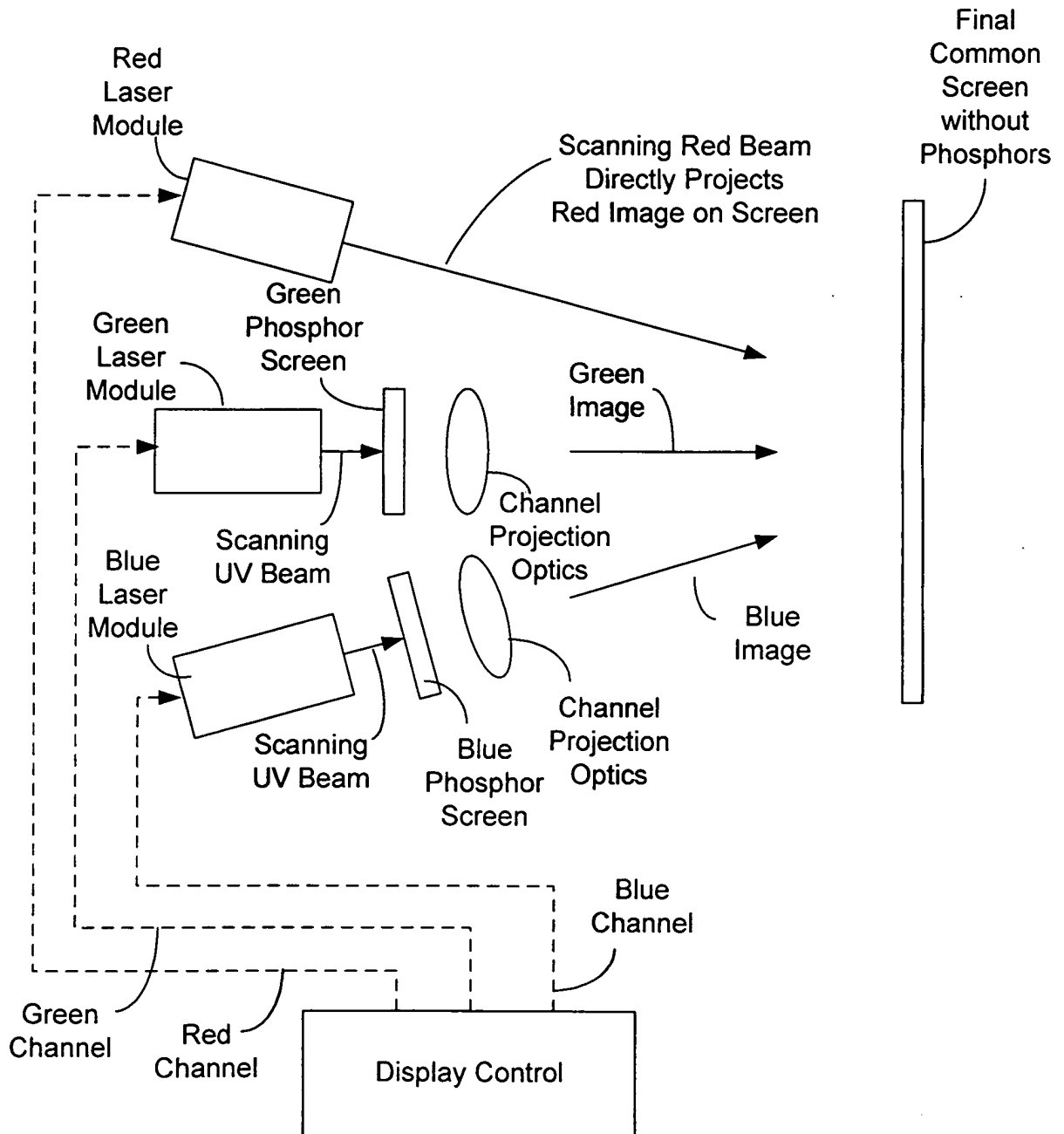
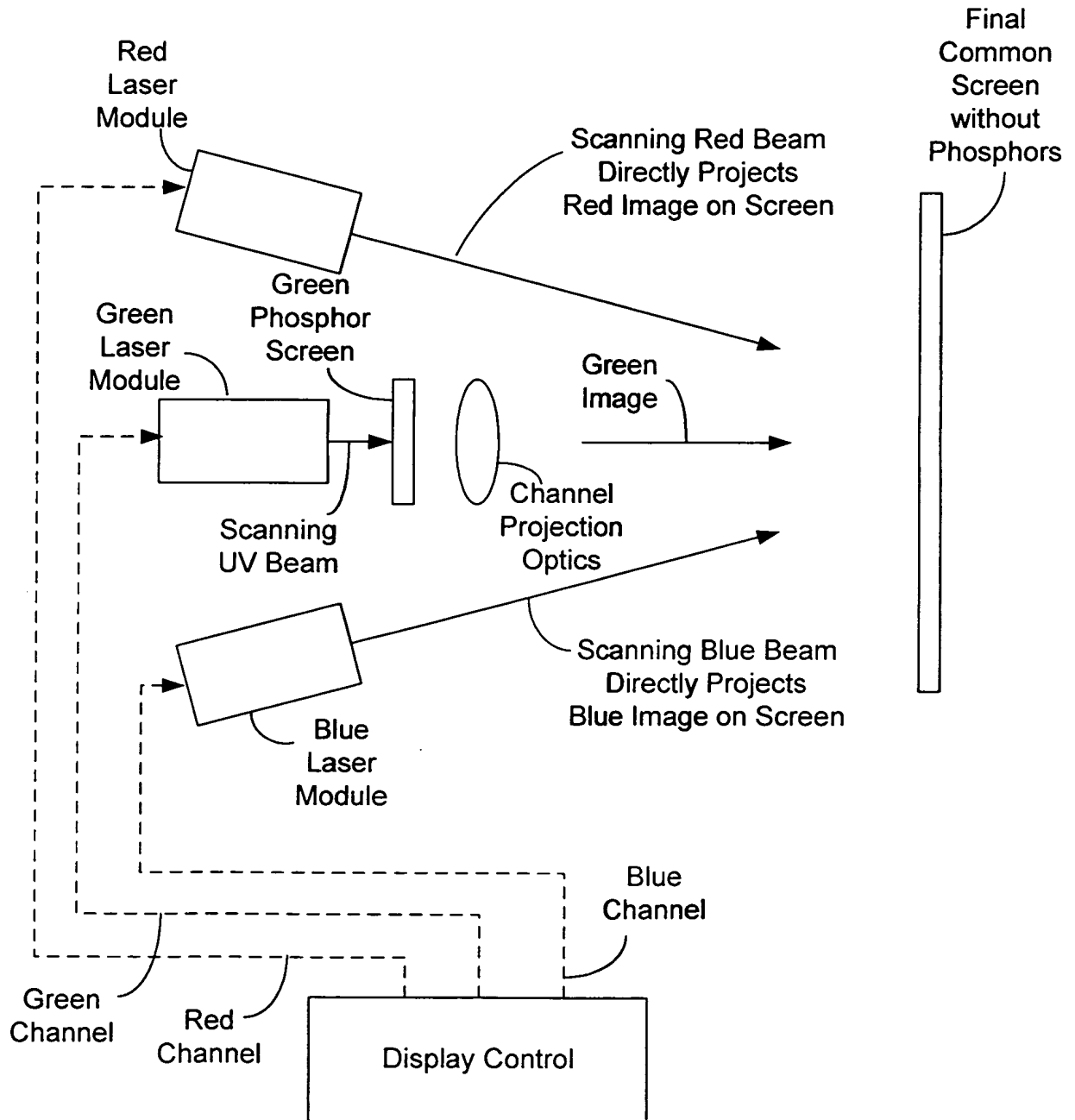
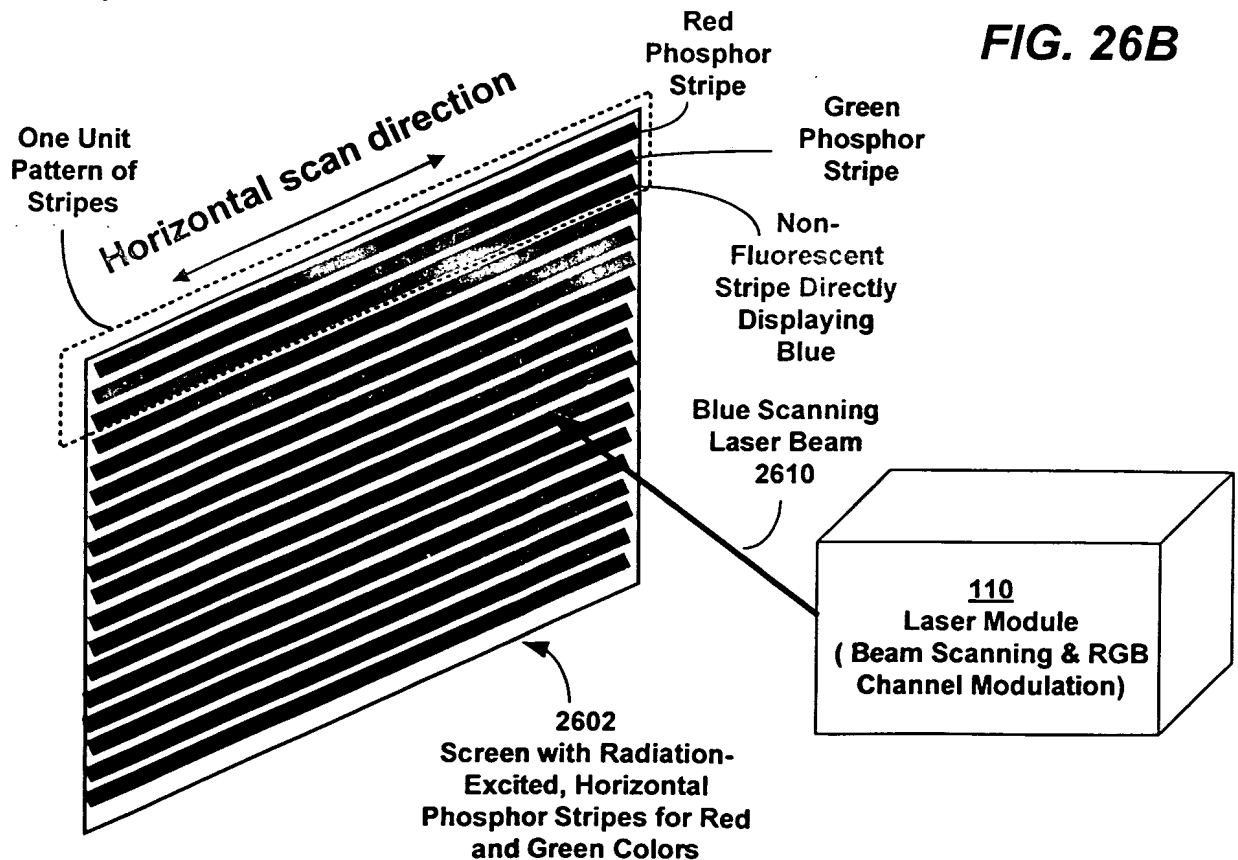
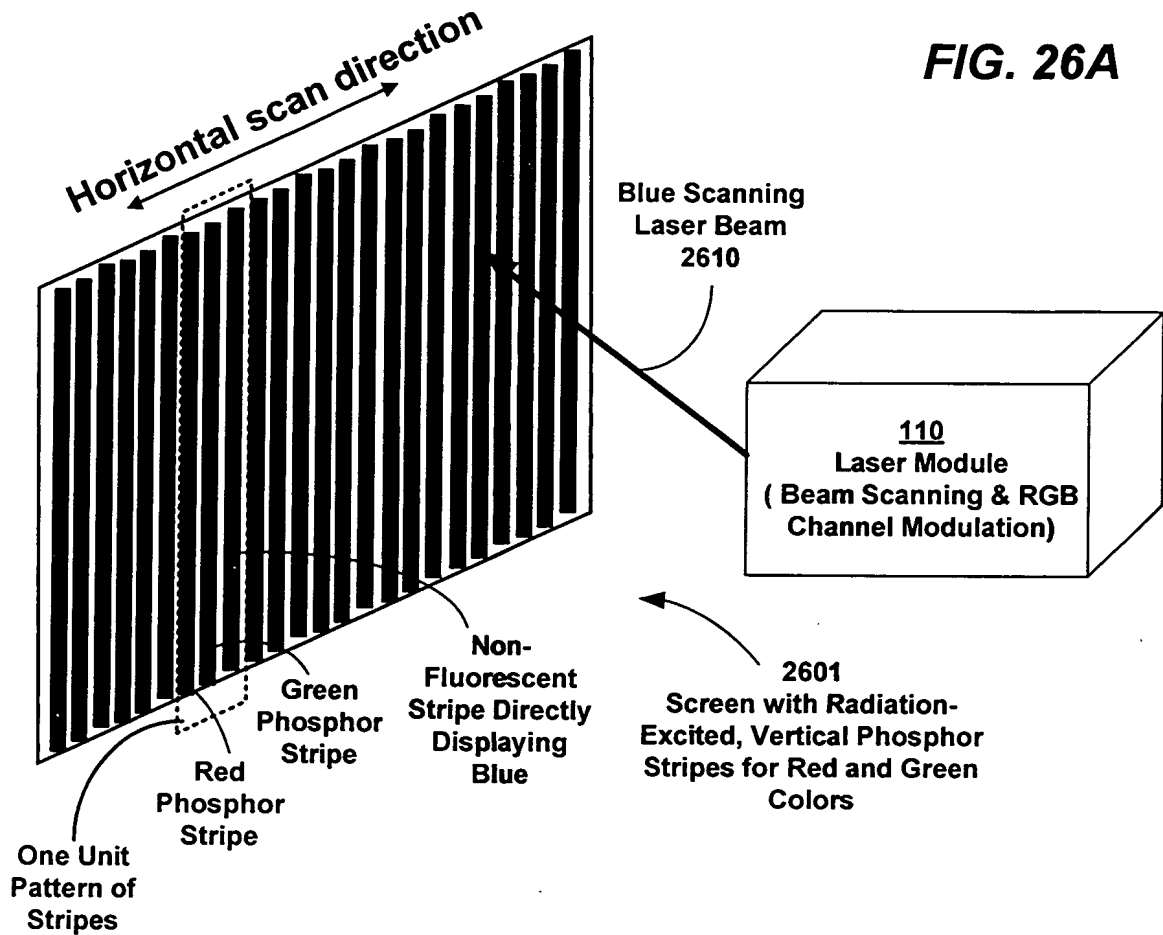


FIG. 25B



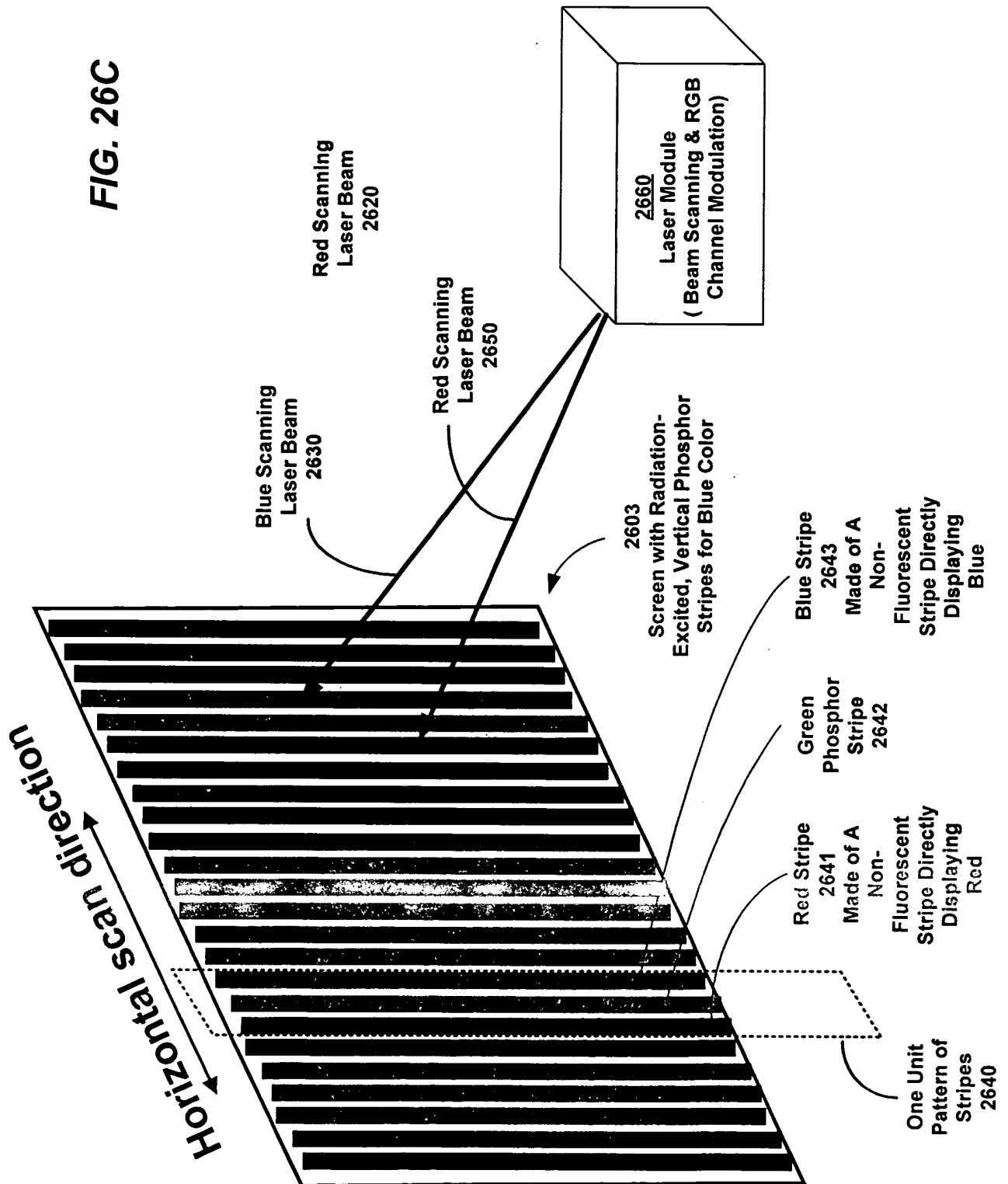


FIG. 27A

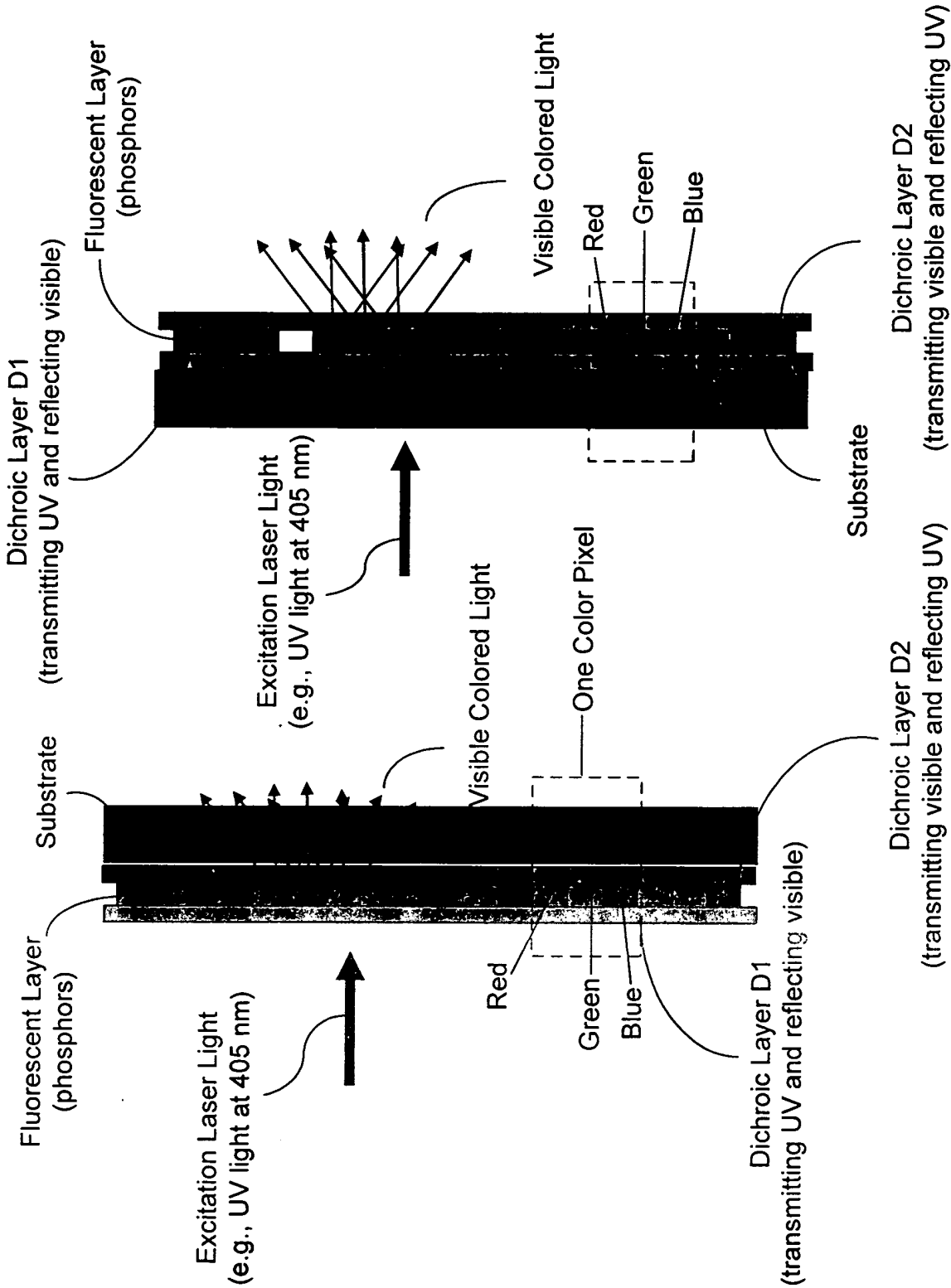


FIG. 27B

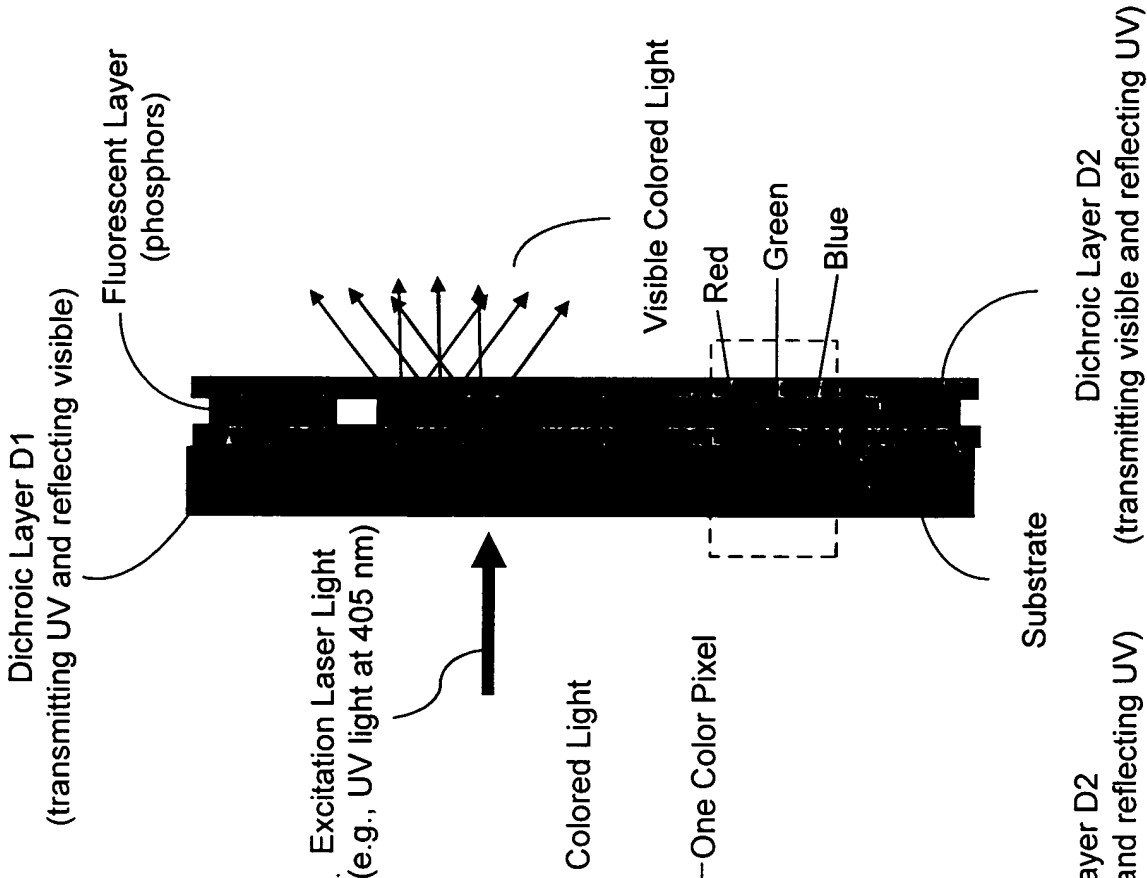


FIG. 27C

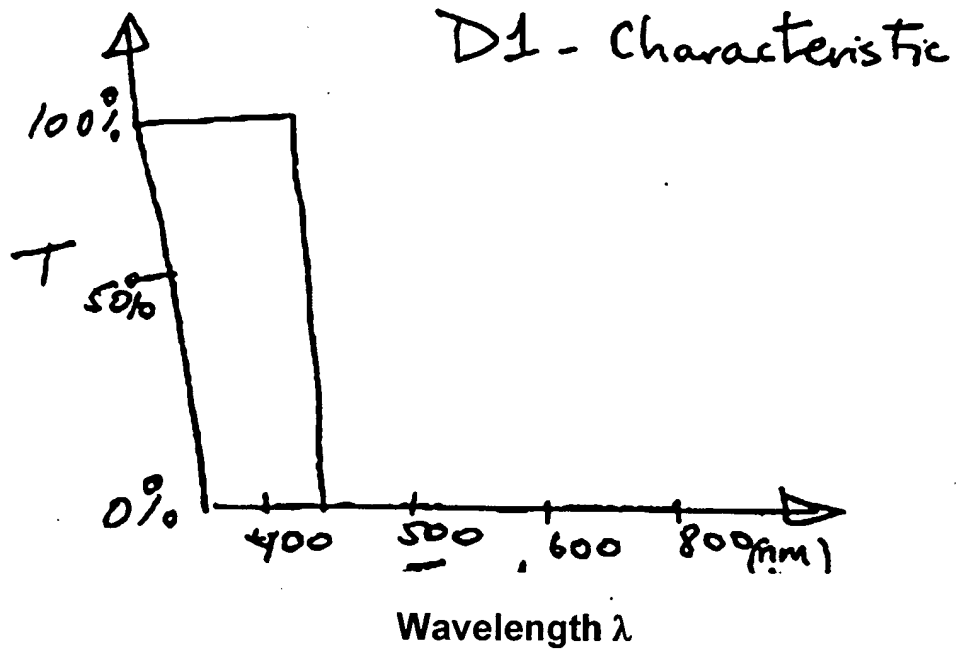
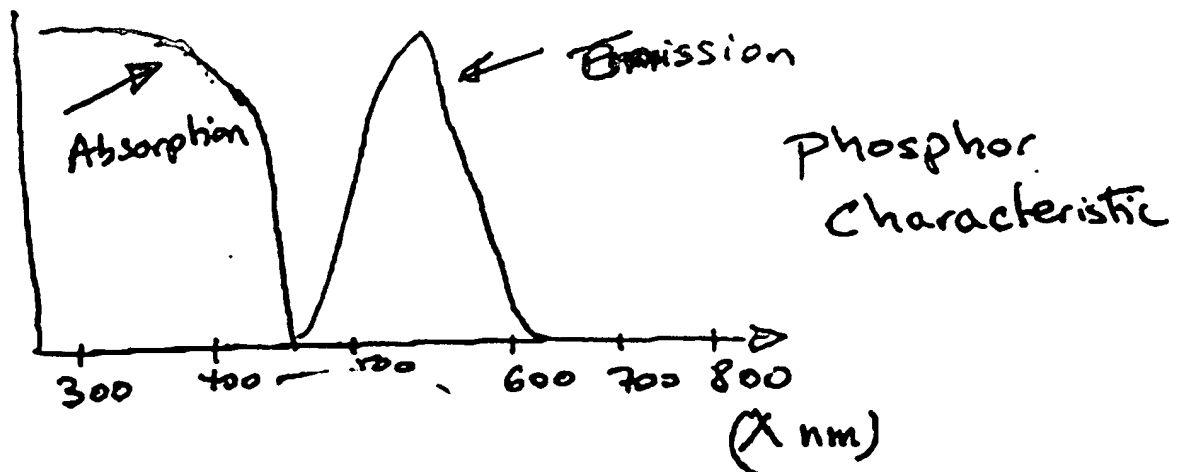


FIG. 27D



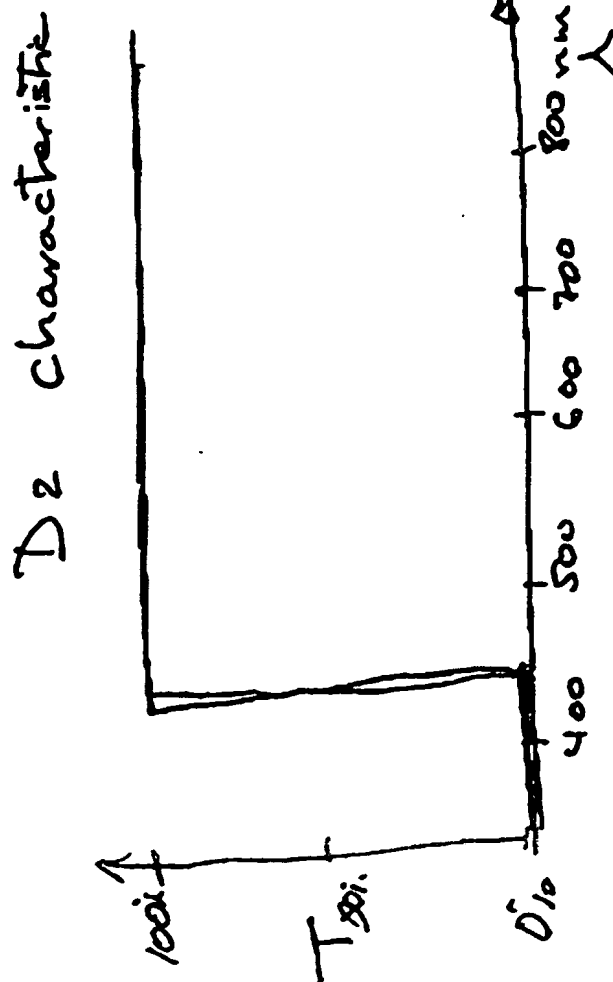


FIG. 27E

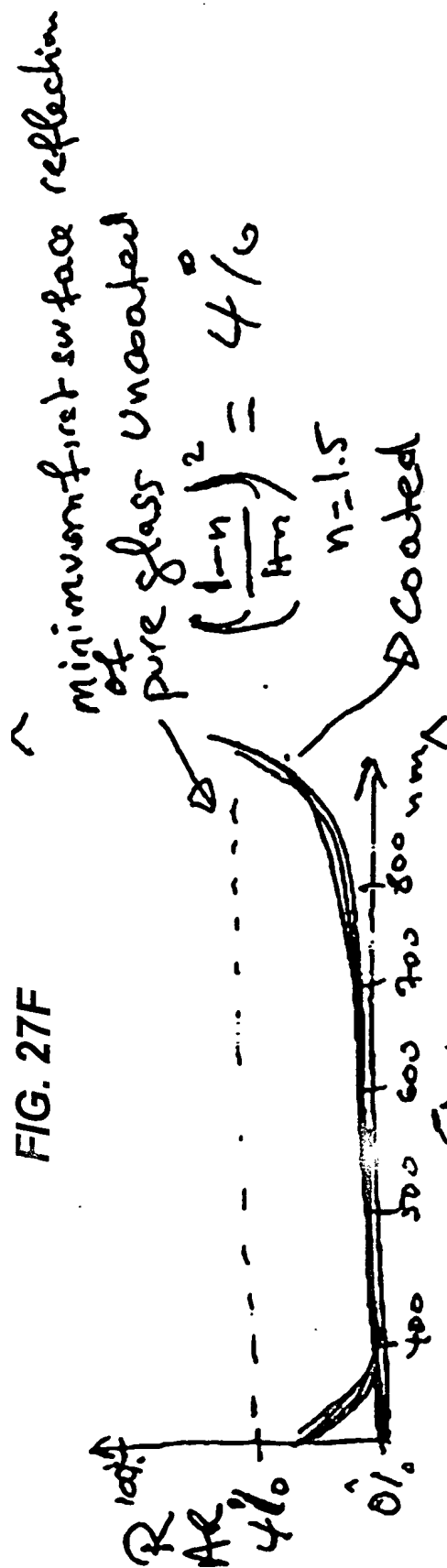


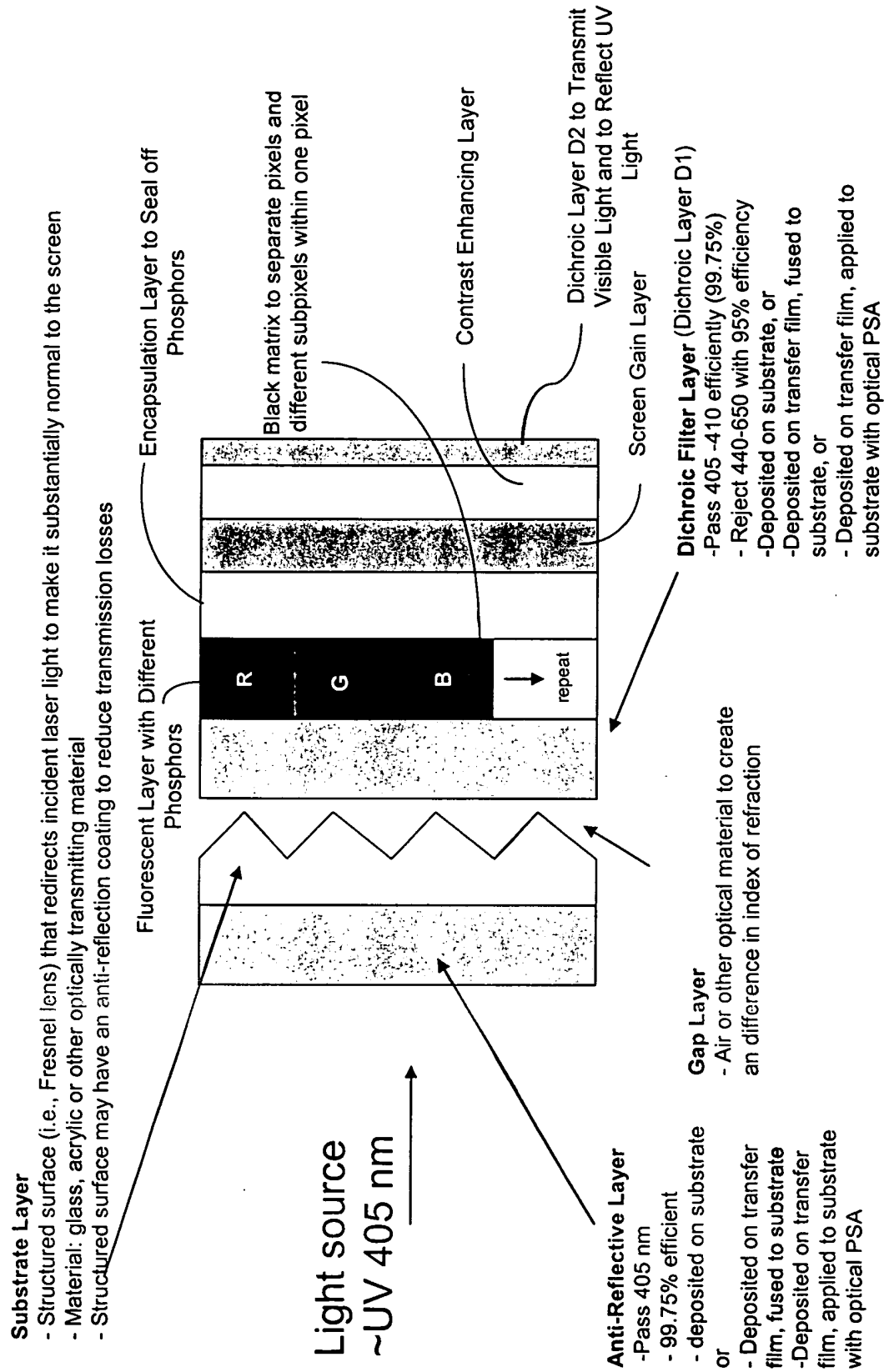
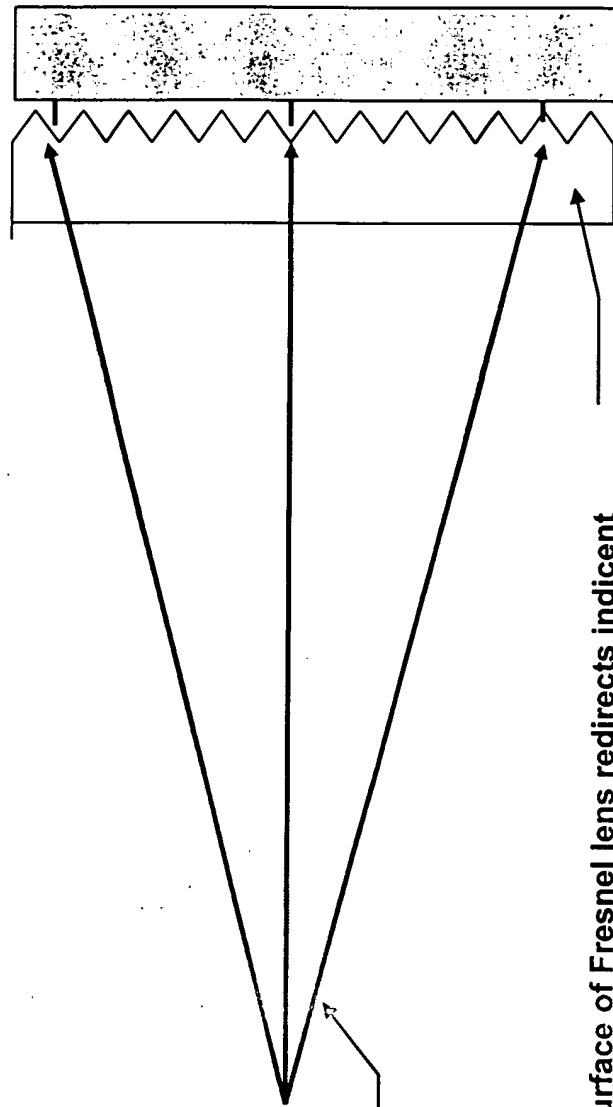
FIG. 28

FIG. 29**Fresnel Lens: Functional Illustration**

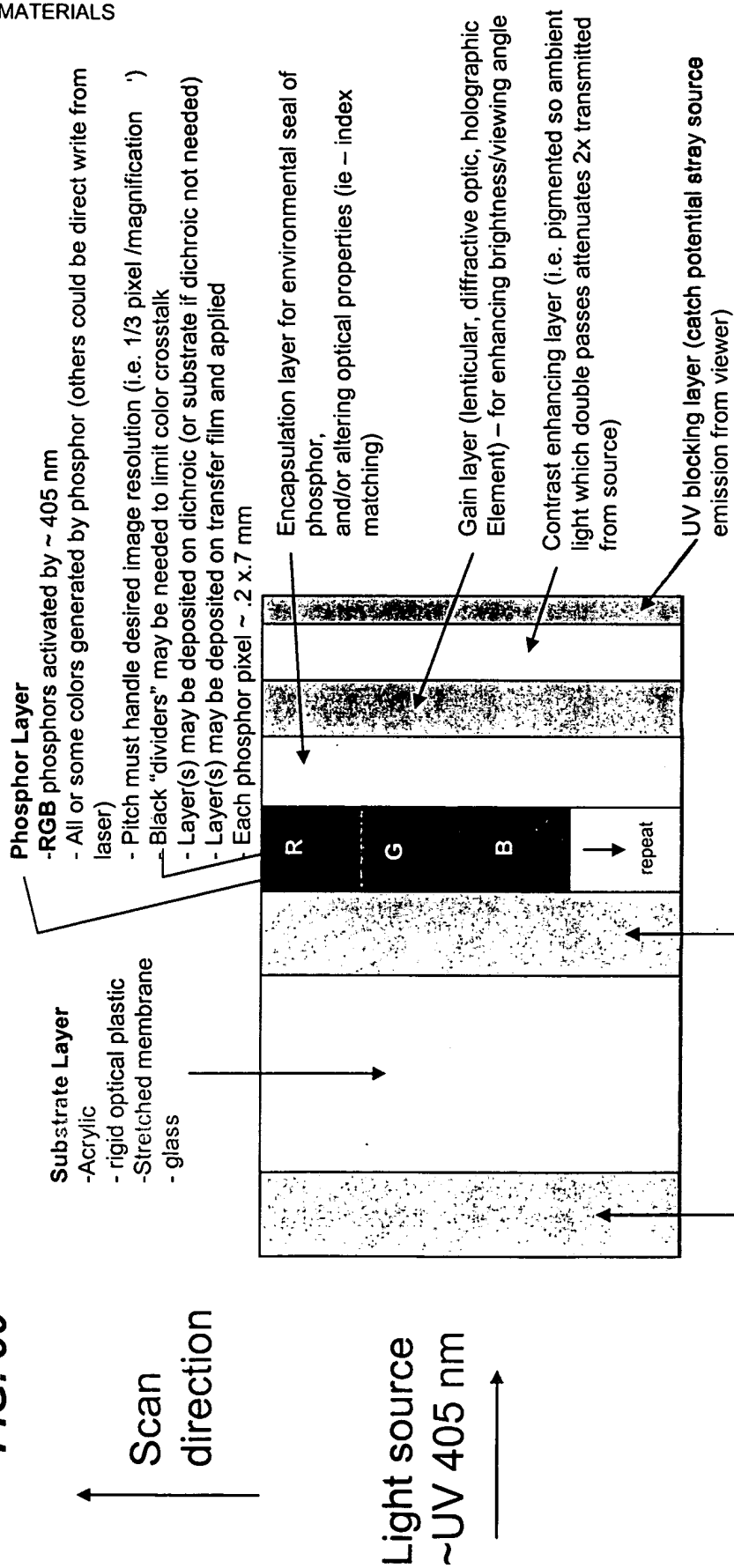
Scanning Laser
beam (2-axis
scan)

Structure surface of Fresnel lens redirects incident
light and makes it normal to the phosphor screen (by
diffraction, refraction or both)

The Fresnel lens spans the full area of the phosphor
screen

Phosphor screen (see FIG. 28
for detailed construction)

FIG. 30



- Anti-Reflective Layer**
- Pass 405 nm
 - 99.75% efficient
 - deposited on substrate
 - or
 - Deposited on transfer film, fused to substrate
 - Deposited on transfer film, applied to substrate with optical PSA
- Dichroic Bandpass/Reflector Layer**
- Pass 405 -410 efficiently (99.75%)
 - Reflect 440-650 with 95% efficiency
 - Deposited on substrate, or
 - Deposited on transfer film, fused to substrate, or
 - Deposited on transfer film, applied to substrate with optical PSA

Note: order of final 4 layers may vary

FIG. 31

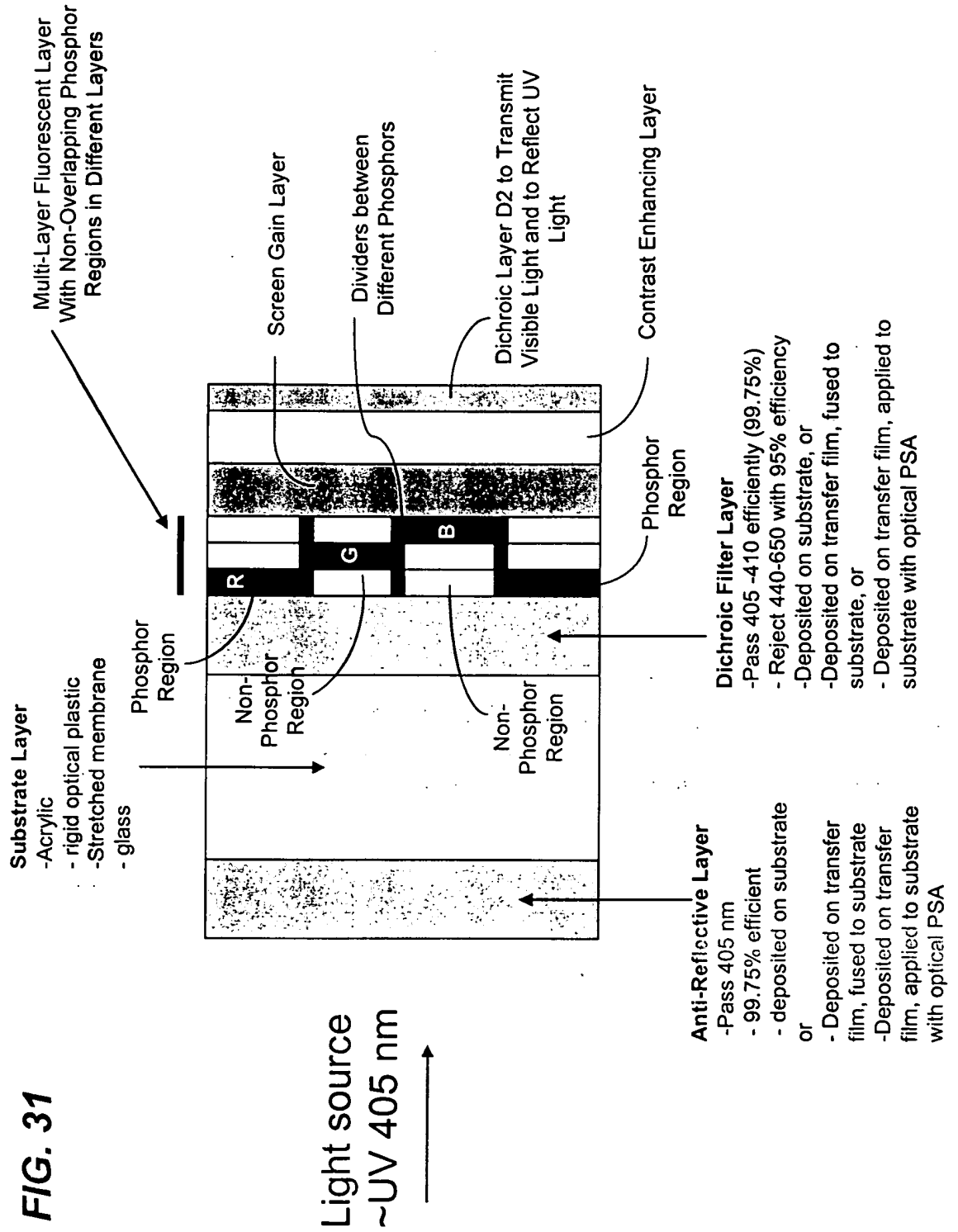
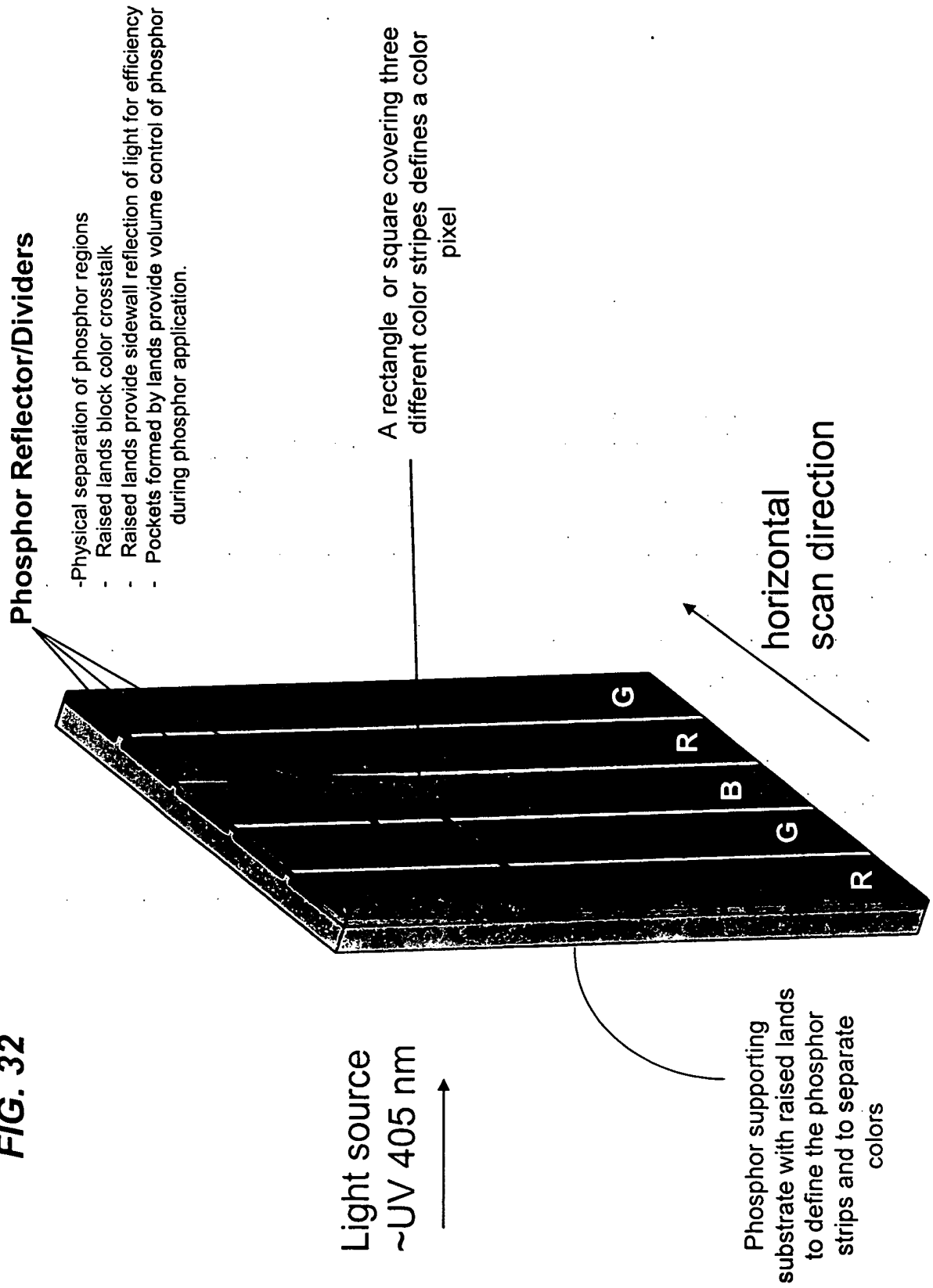
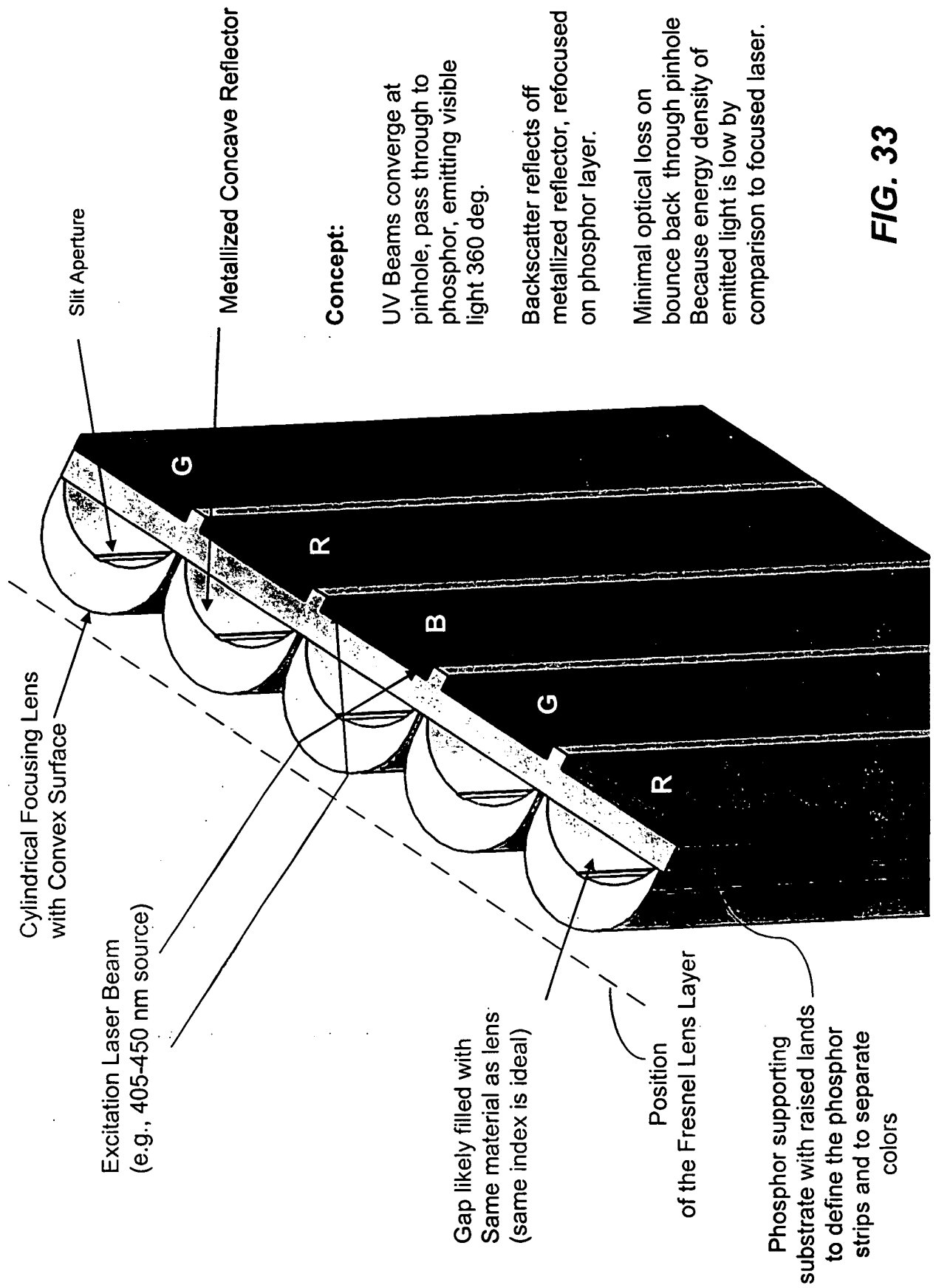


FIG. 32





Concept:

UV Beams converge at pinhole, pass through to phosphor, emitting visible light 360 deg.

Backscatter reflects off metallized reflector, refocused on phosphor layer.

Minimal optical loss on bounce back through pinhole
Because energy density of emitted light is low by comparison to focused laser.

FIG. 33

FIG. 34A

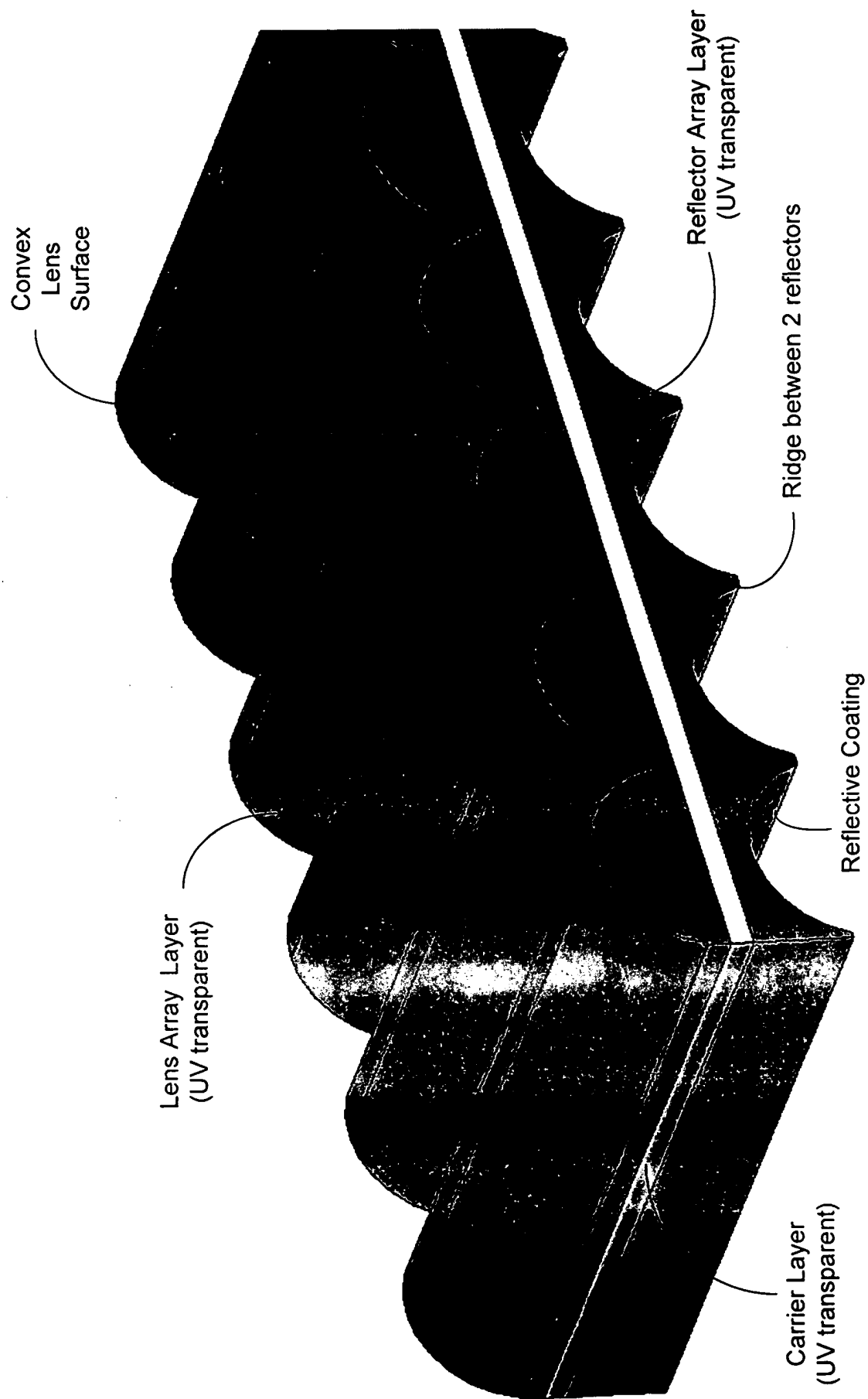


FIG. 34B

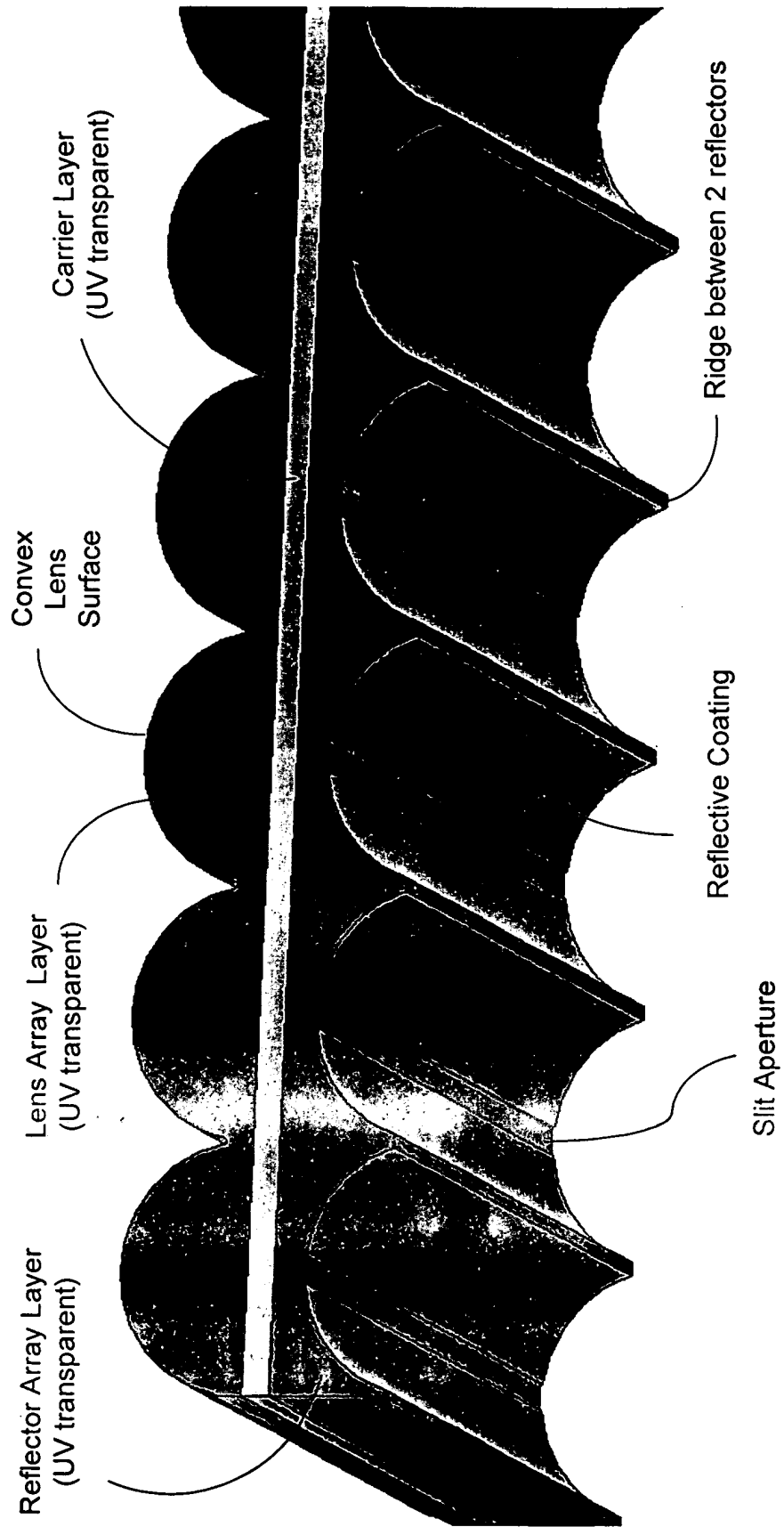


FIG. 35A

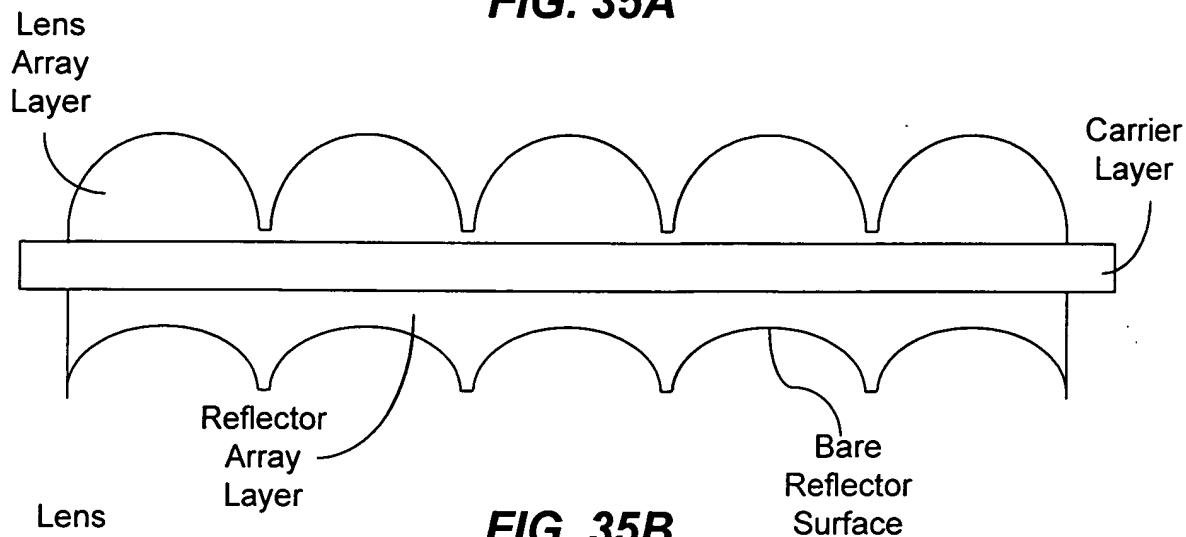


FIG. 35B

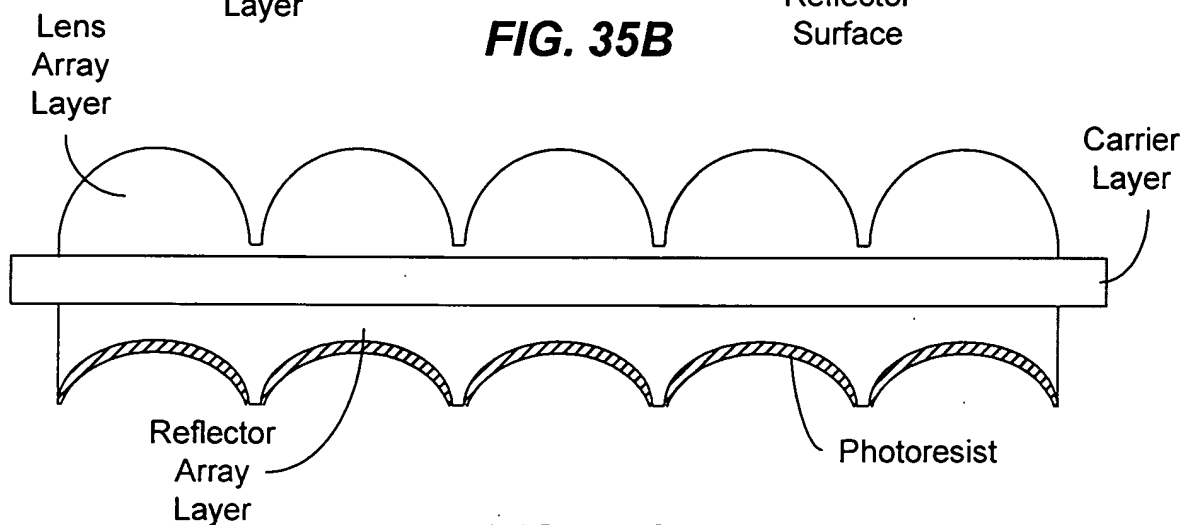


FIG. 35C

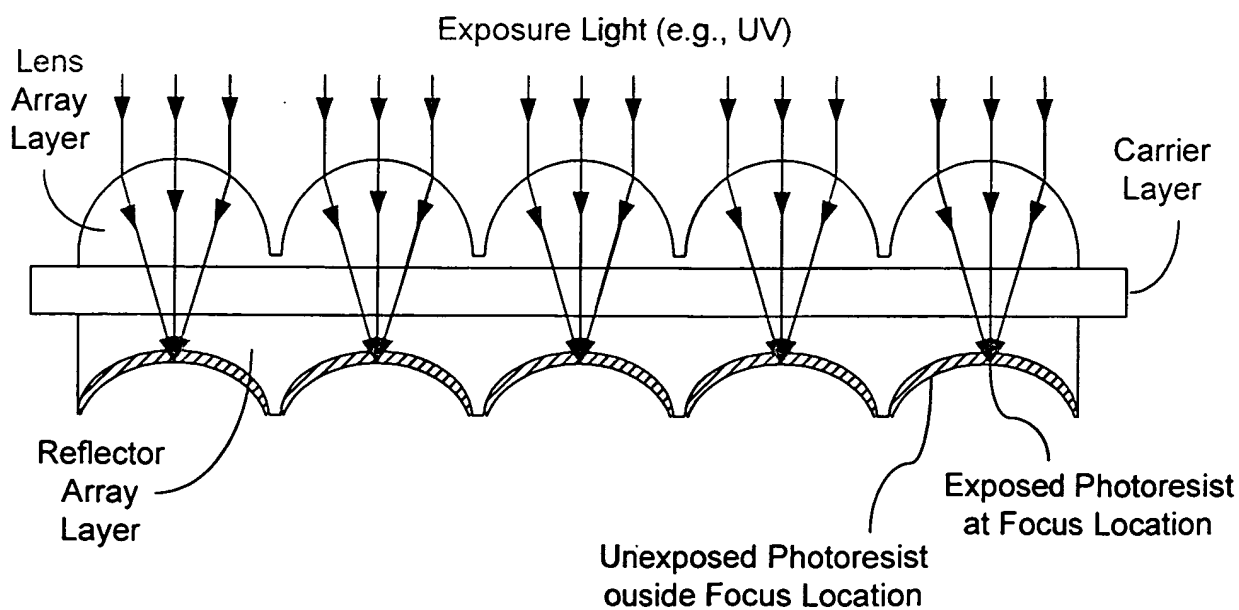


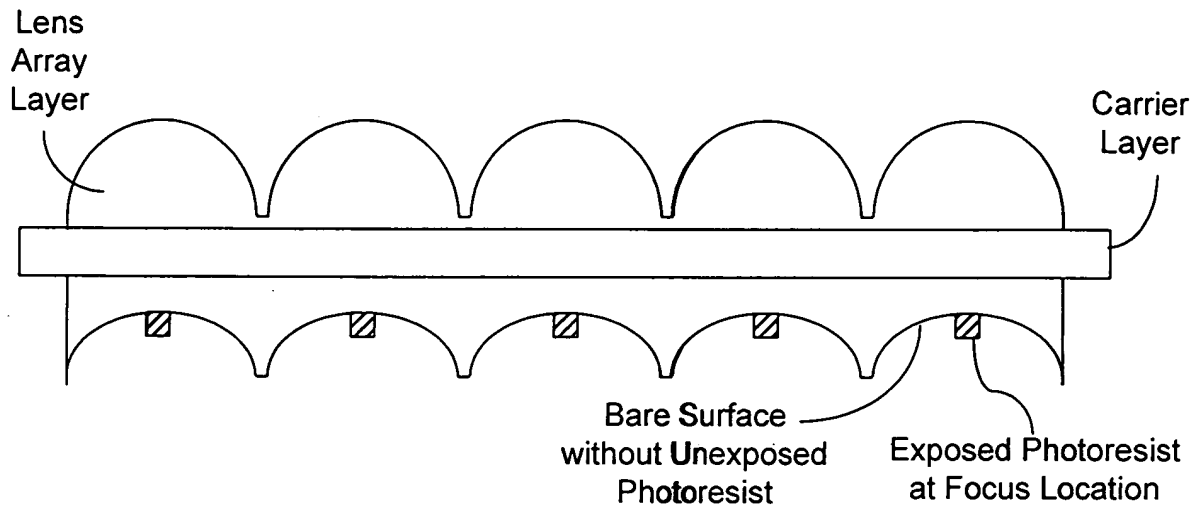
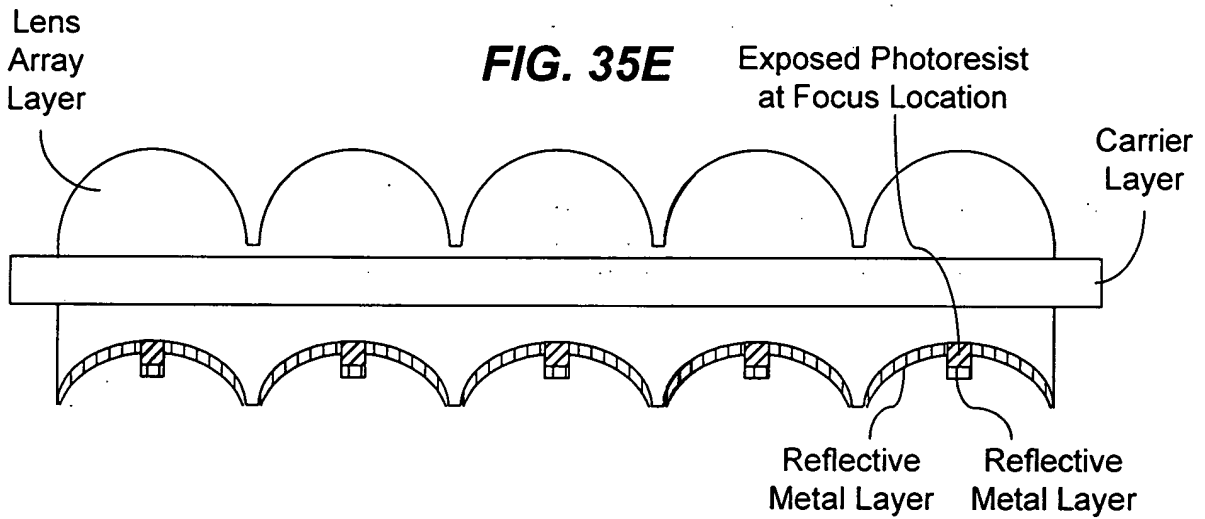
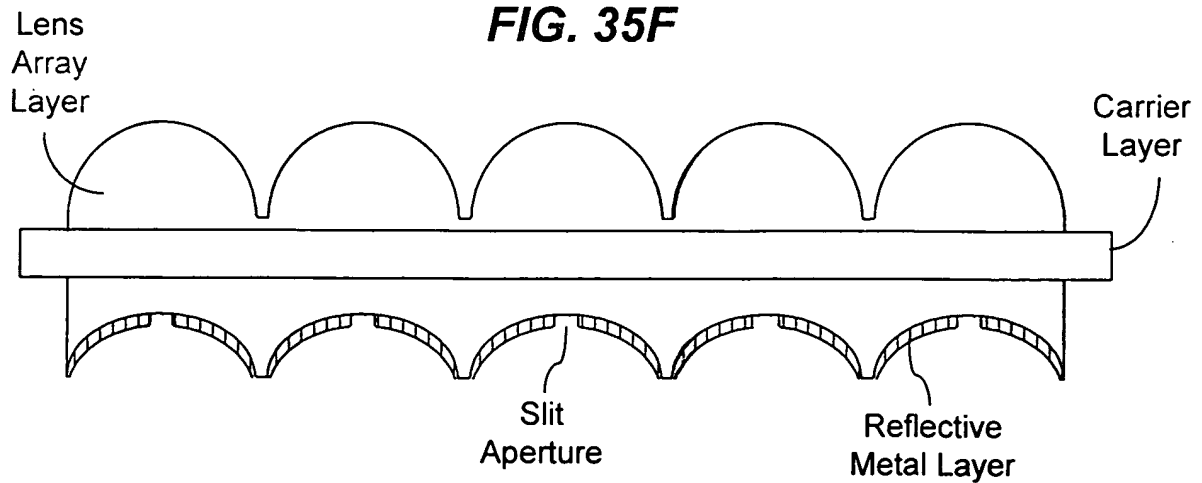
FIG. 35D**FIG. 35E****FIG. 35F**

FIG. 36

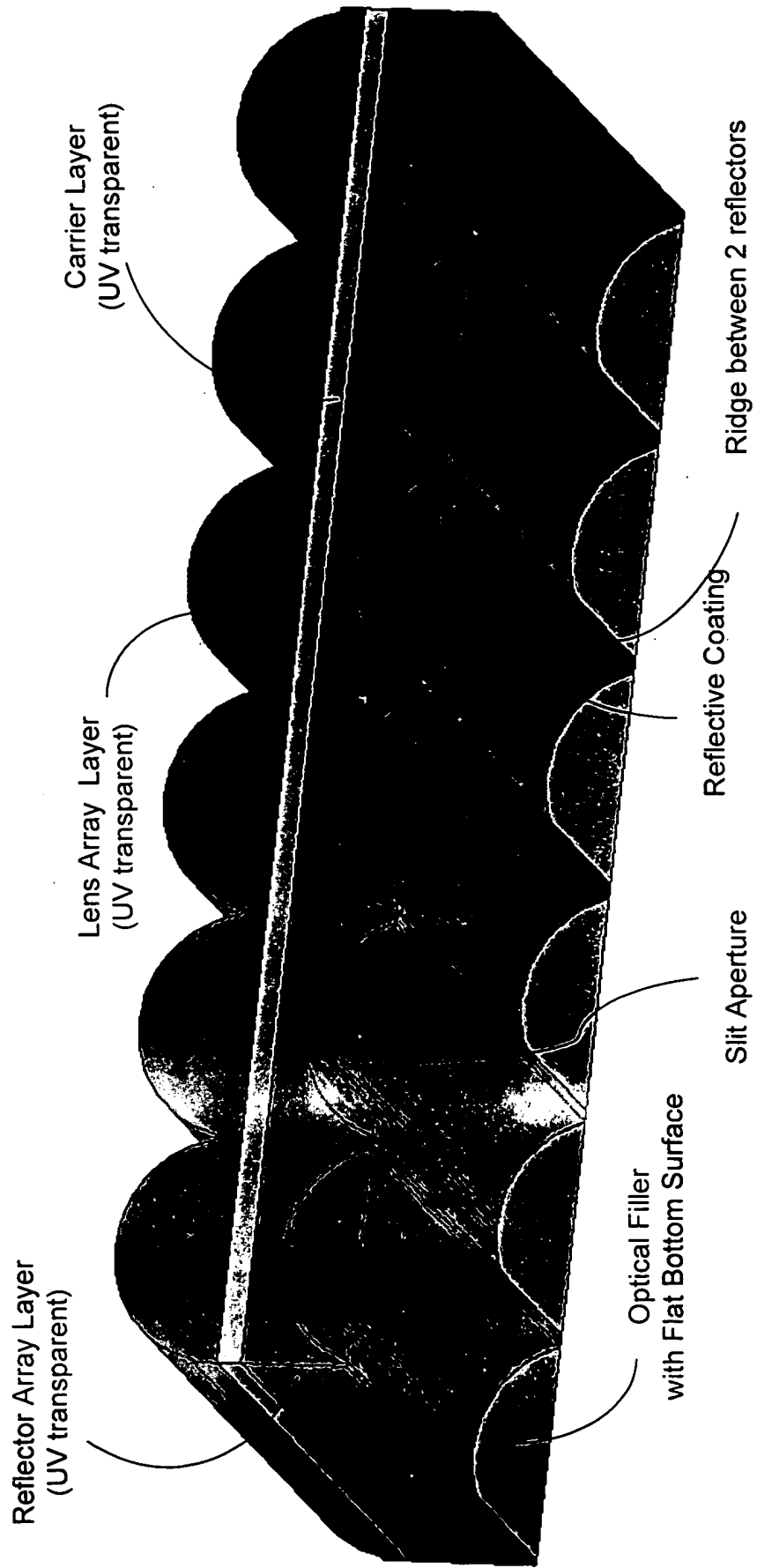


FIG. 37

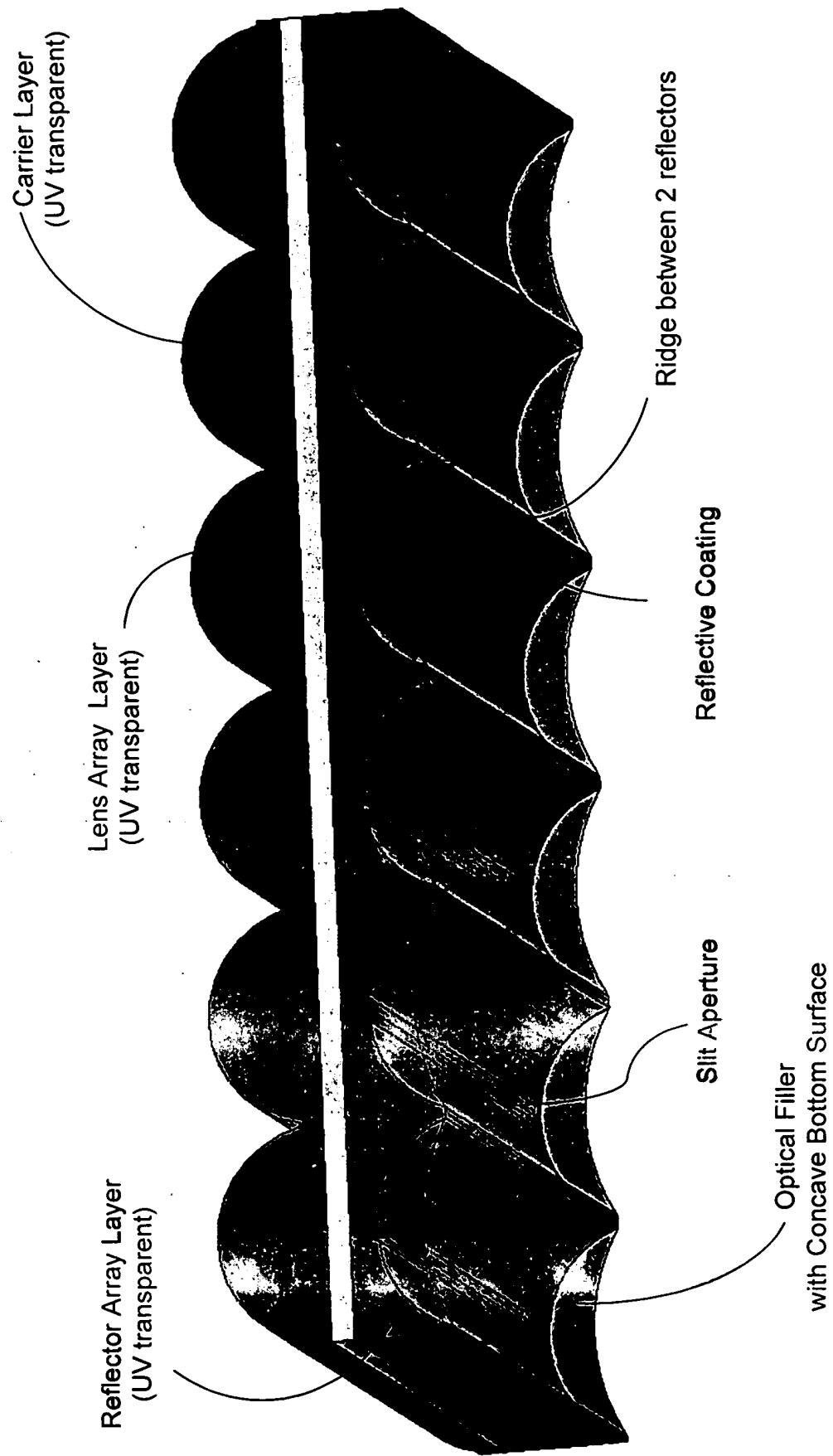


FIG. 38

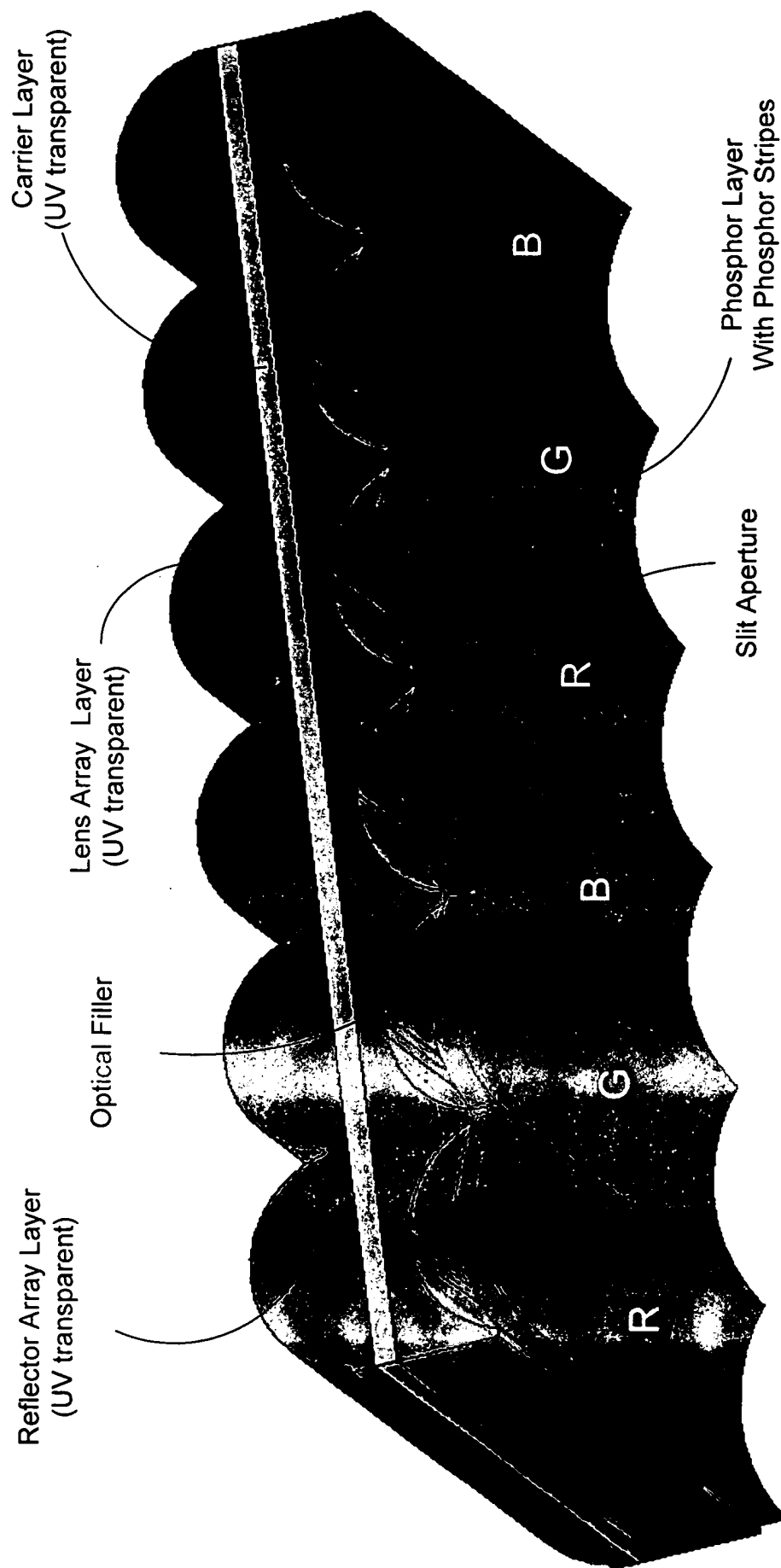


FIG. 39

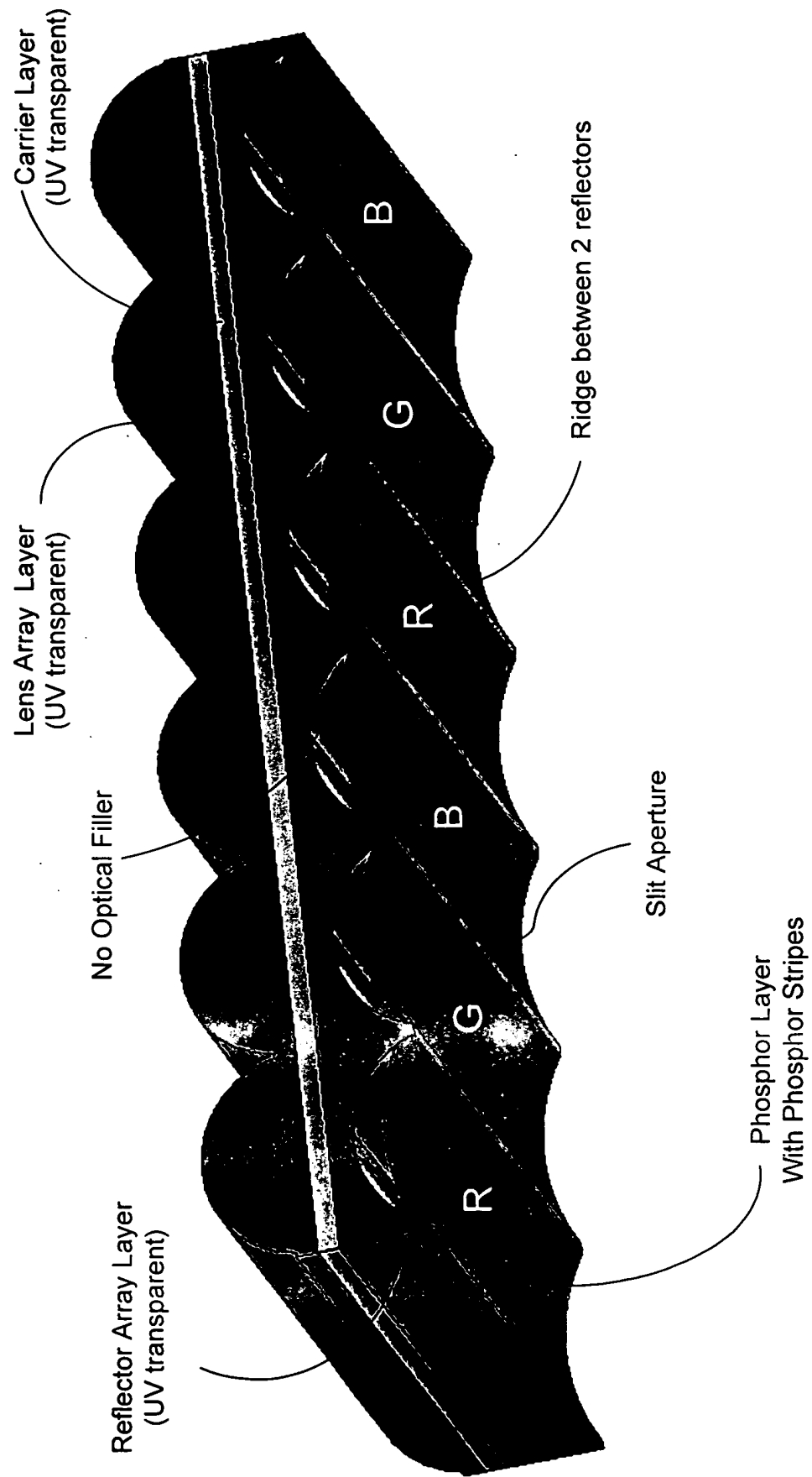


FIG. 40

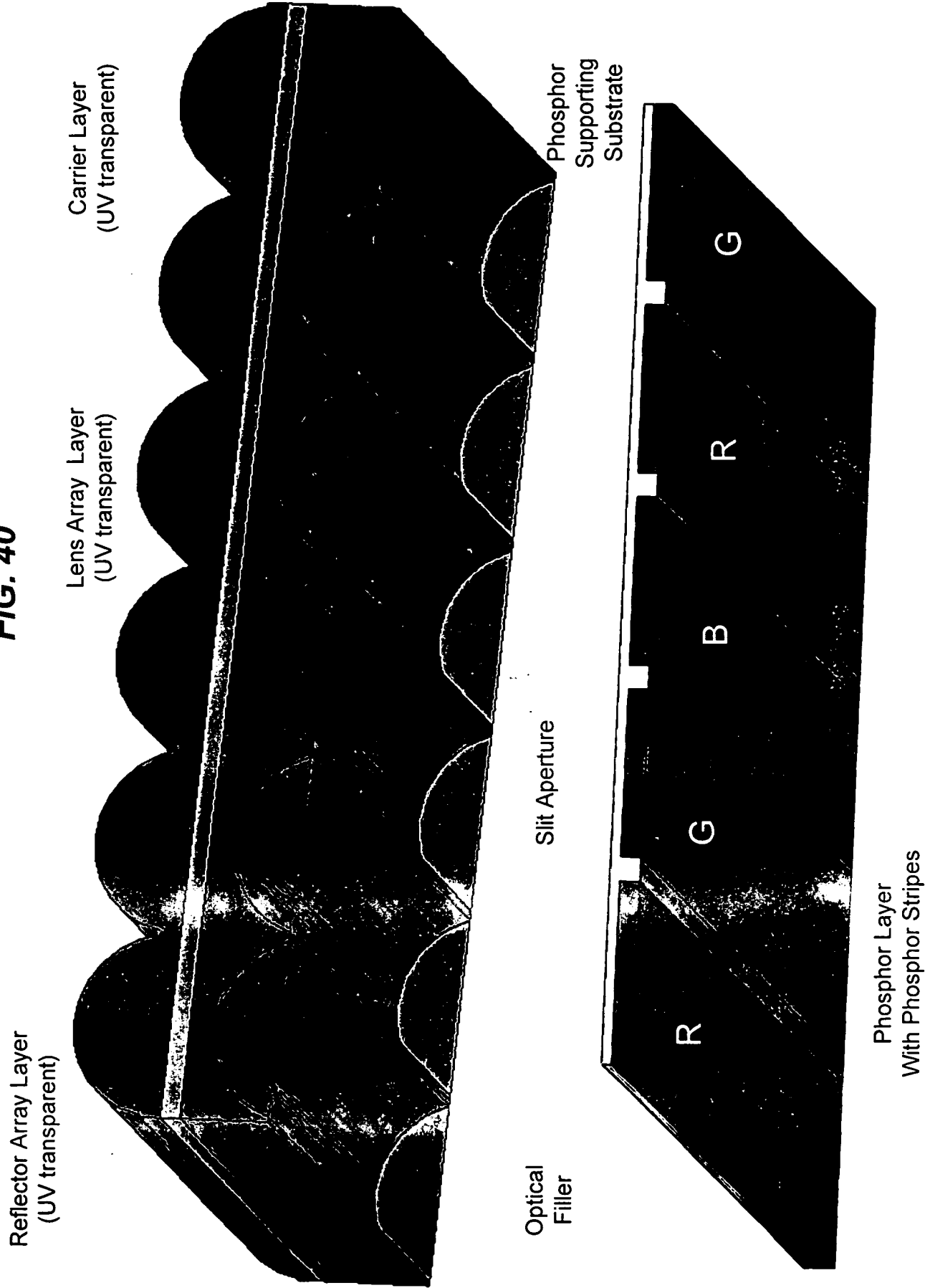
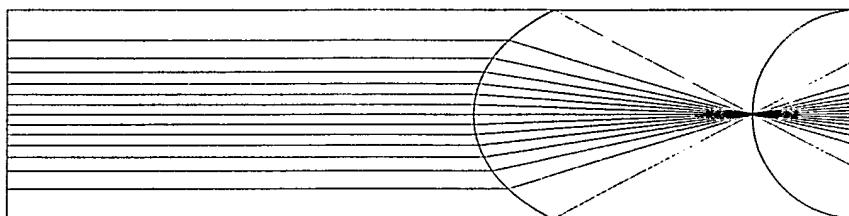
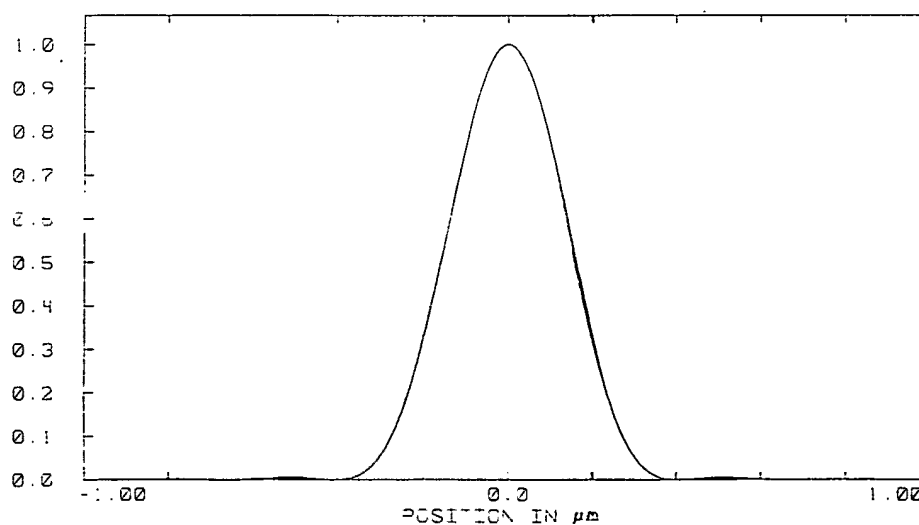


FIG. 41A



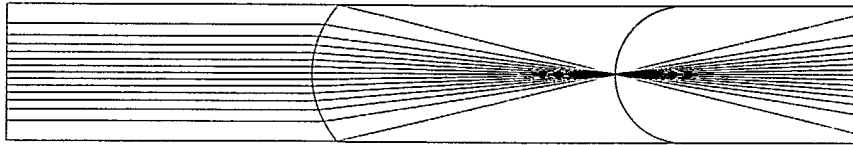
Subpixel with hemispherical Reflector

FIG. 41B



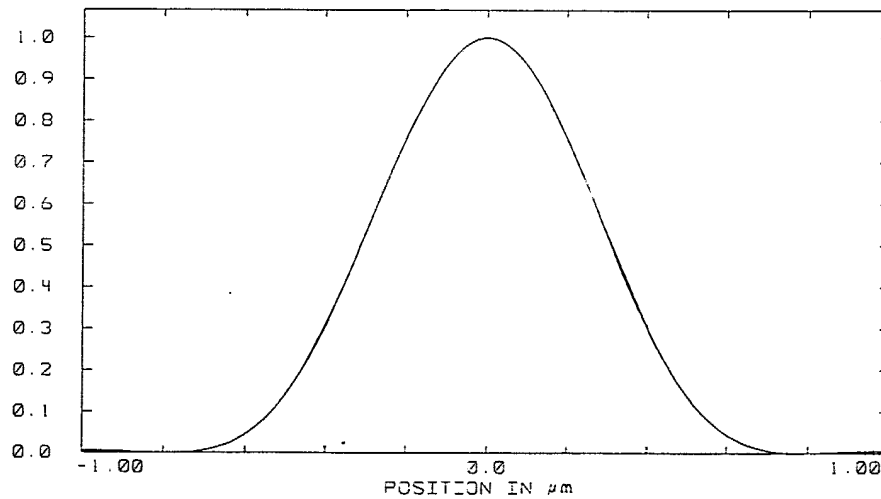
Subpixel with hemispherical Reflector

FIG. 42A

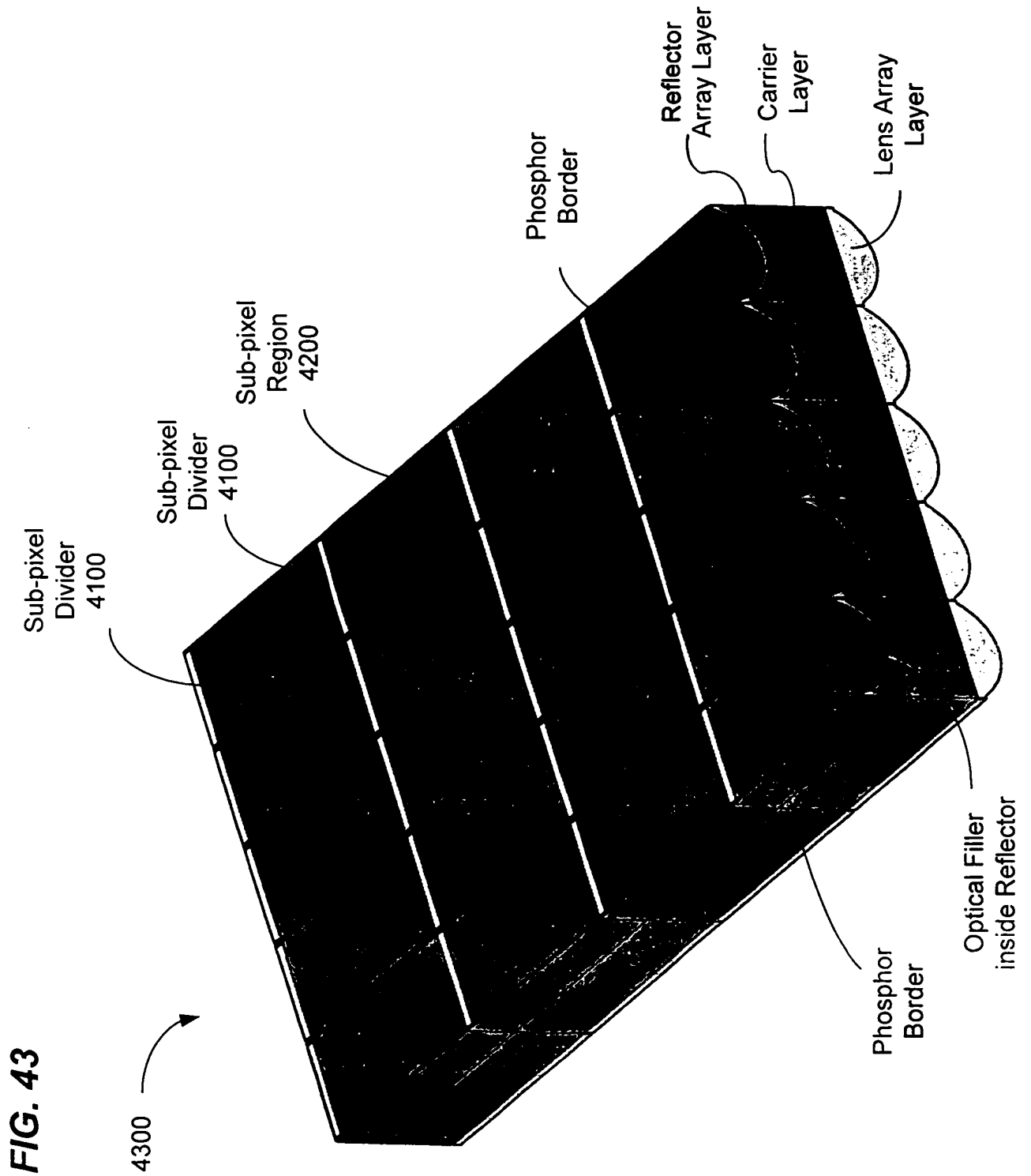


Subpixel with hemispherical Reflector

FIG. 42B



Subpixel with hemispherical Reflector



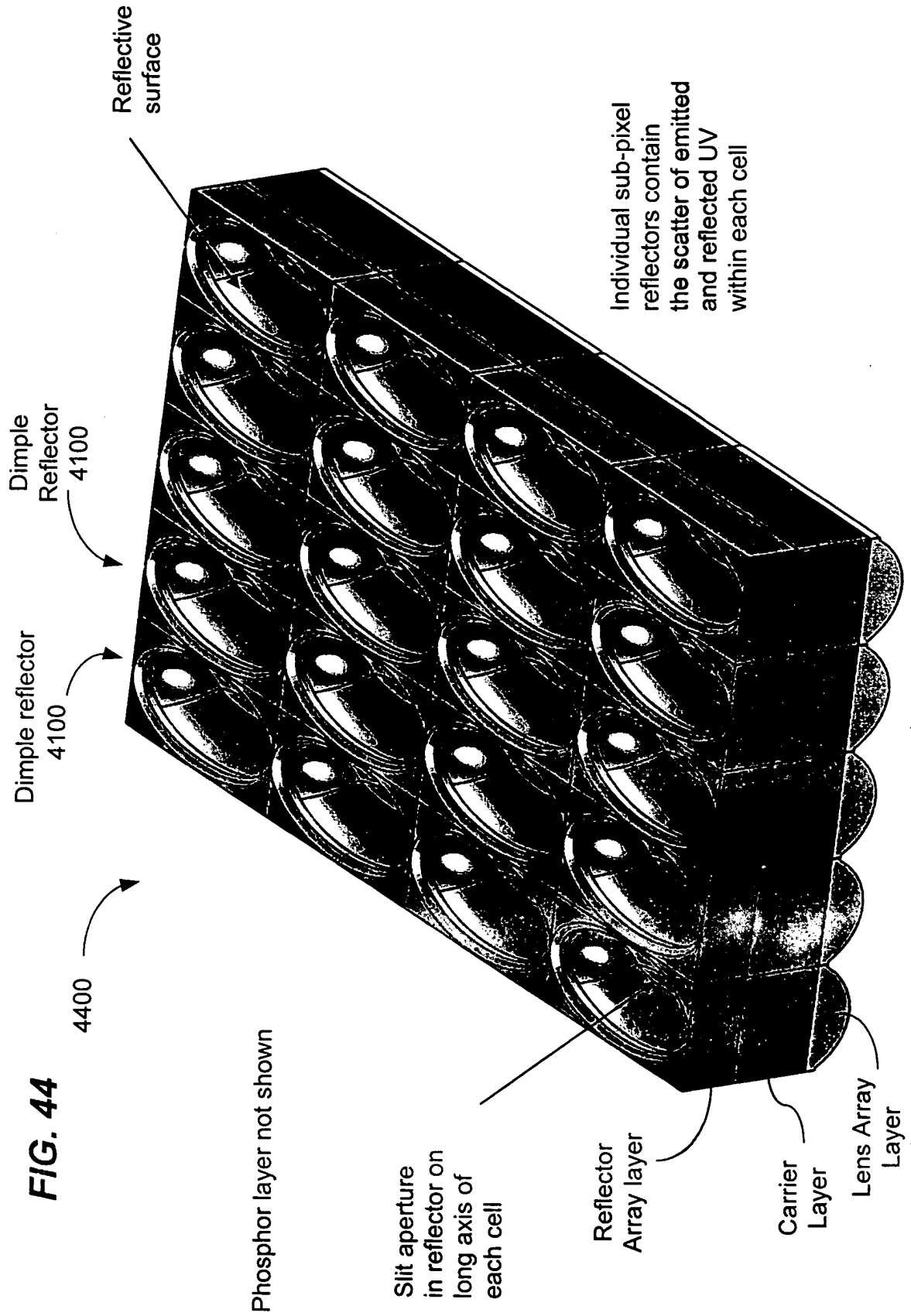


FIG. 45

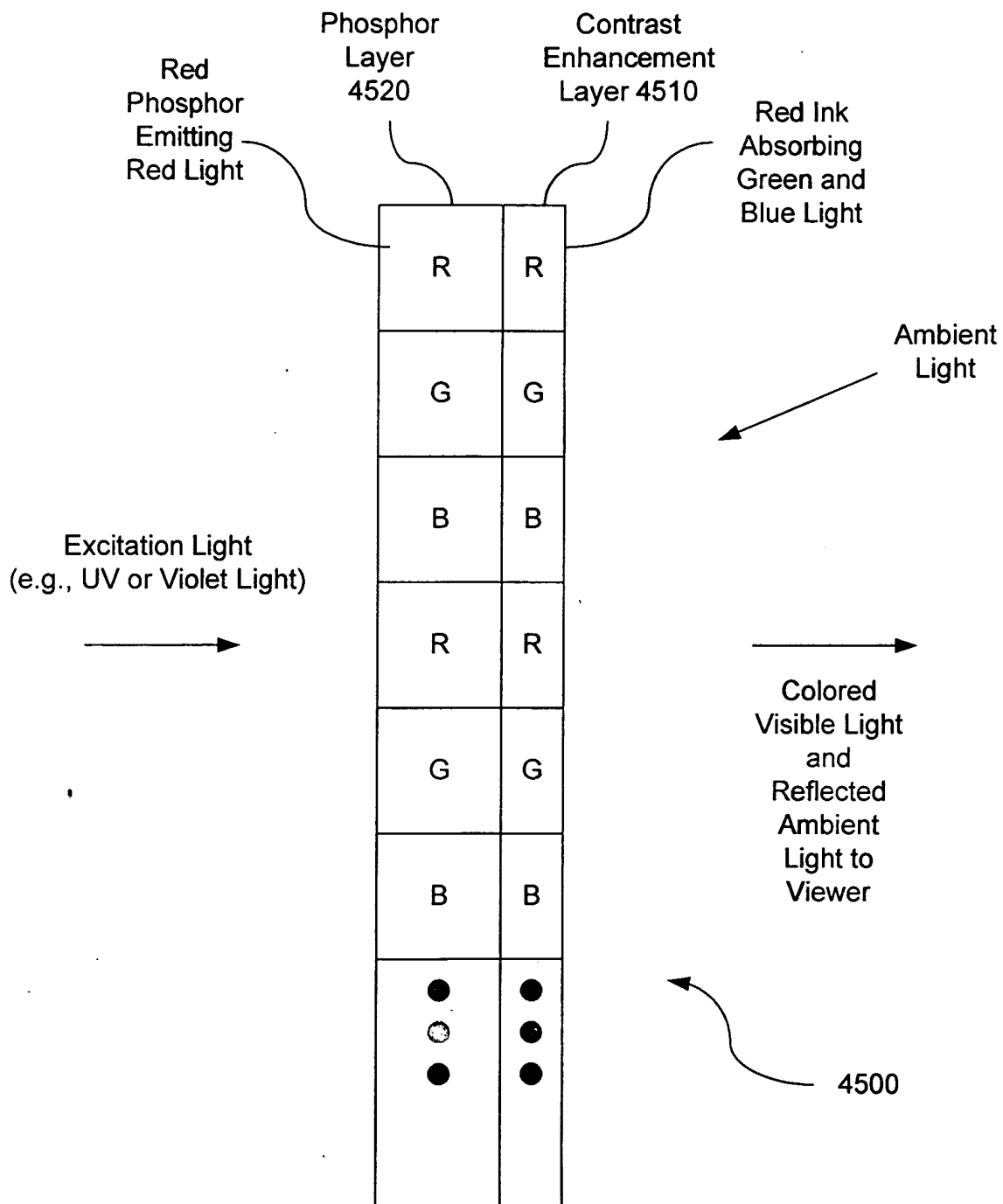


FIG. 46

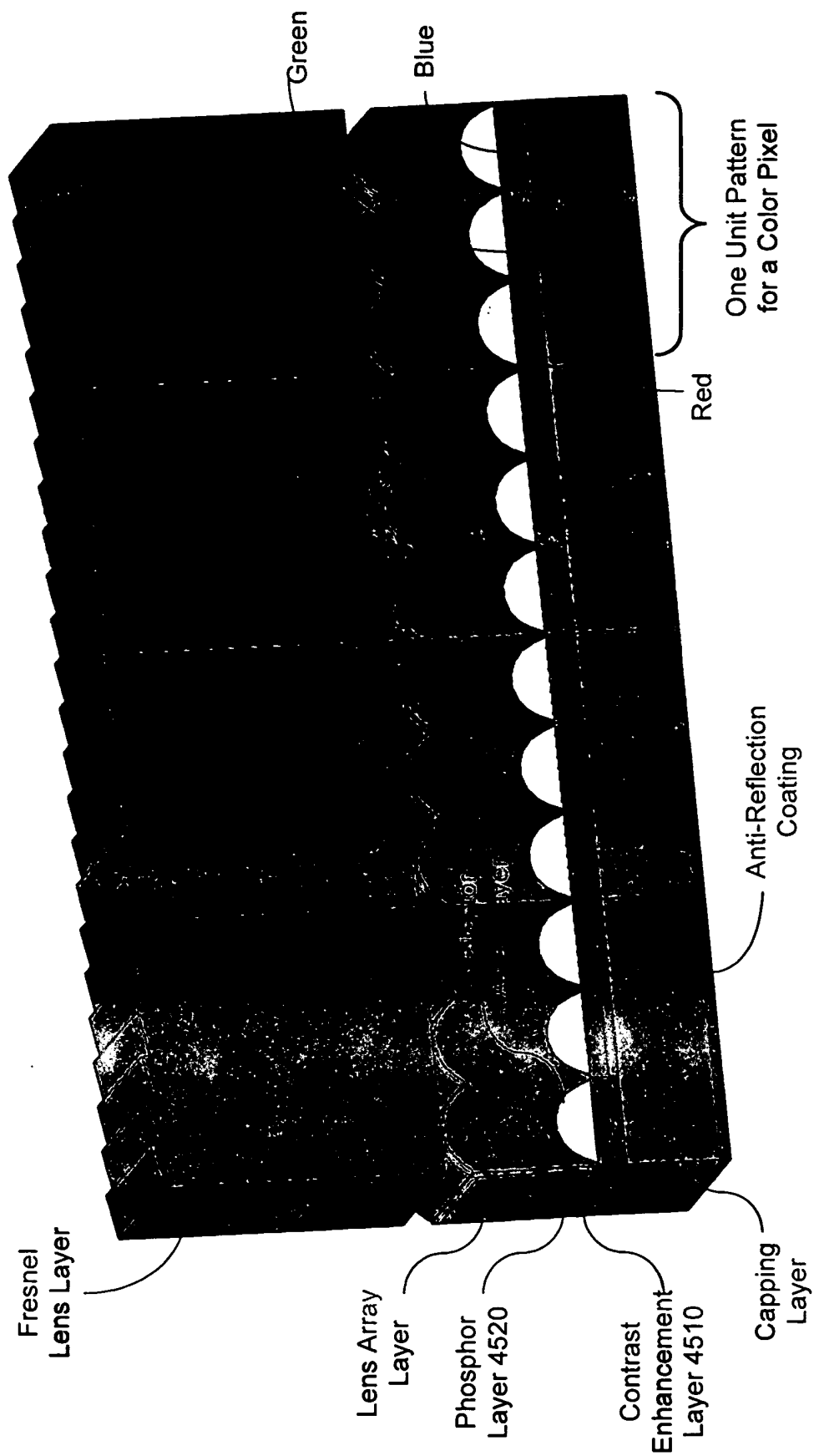


FIG. 47

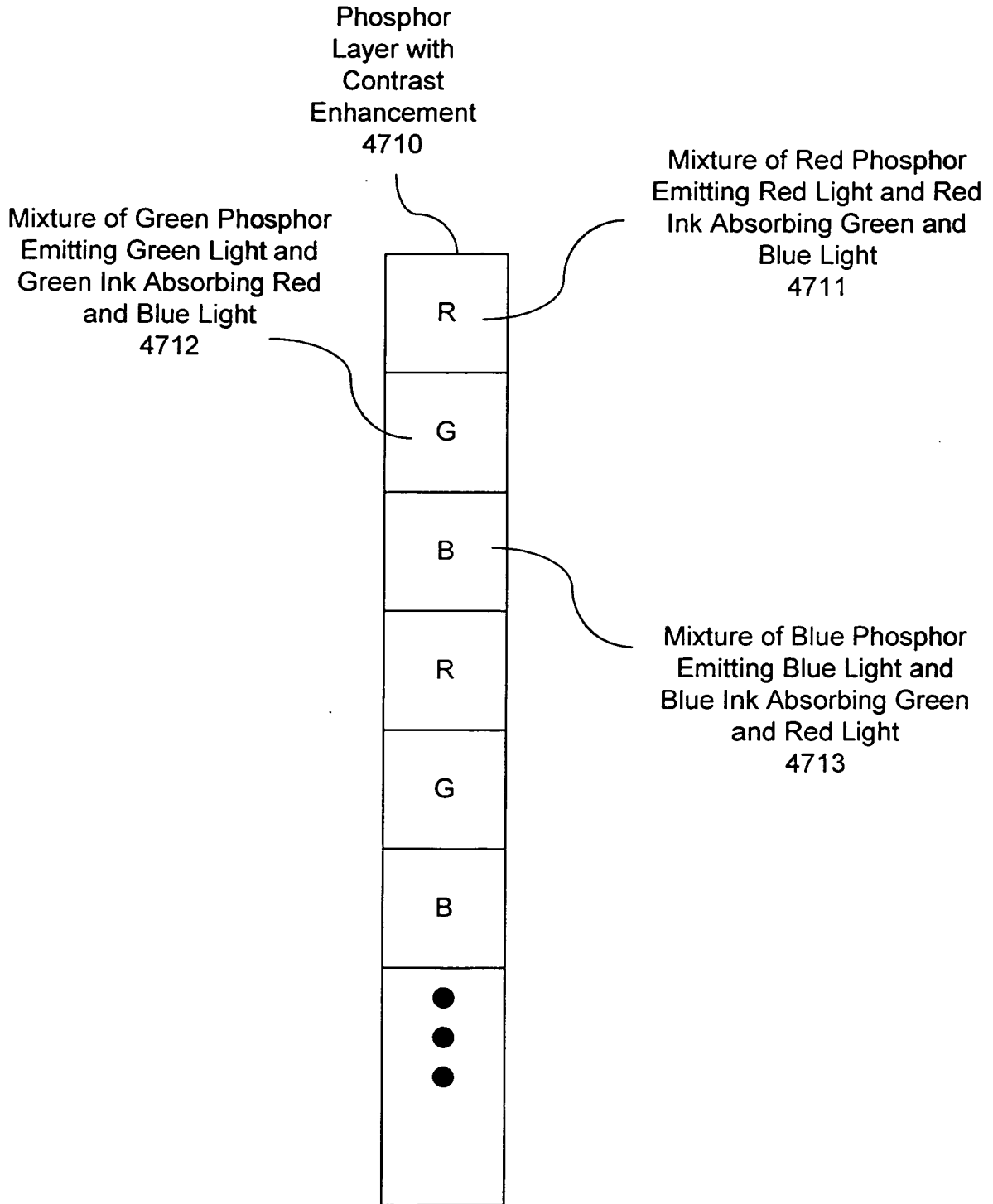


FIG. 48

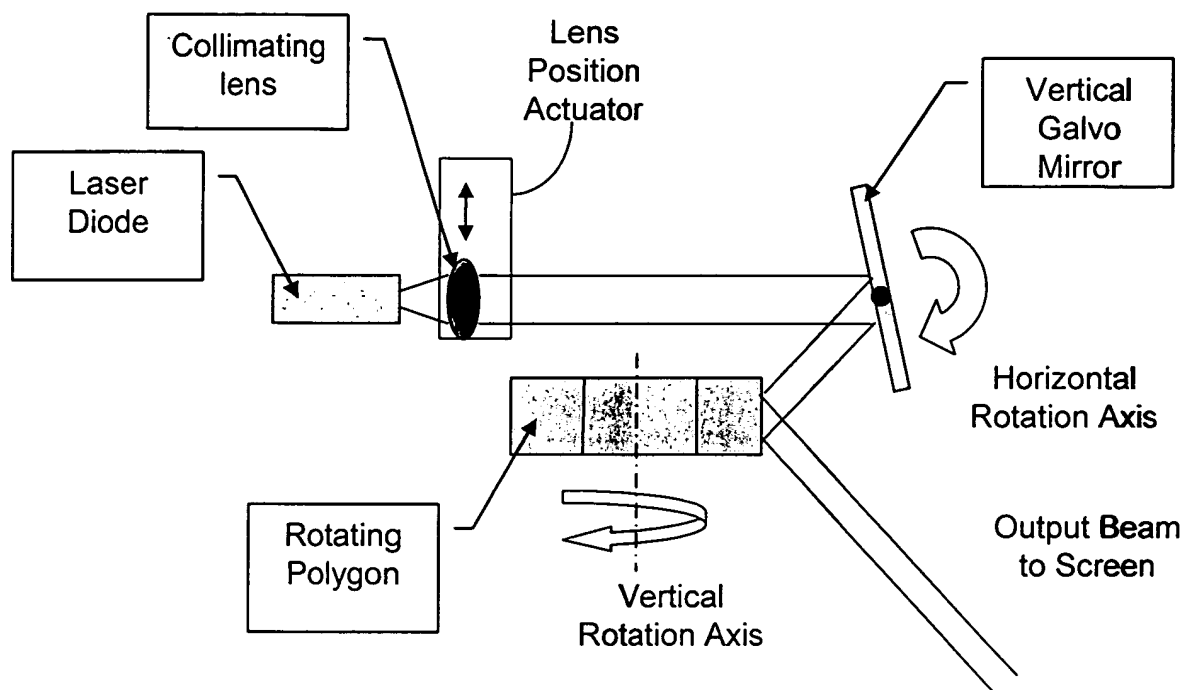


FIG. 49A

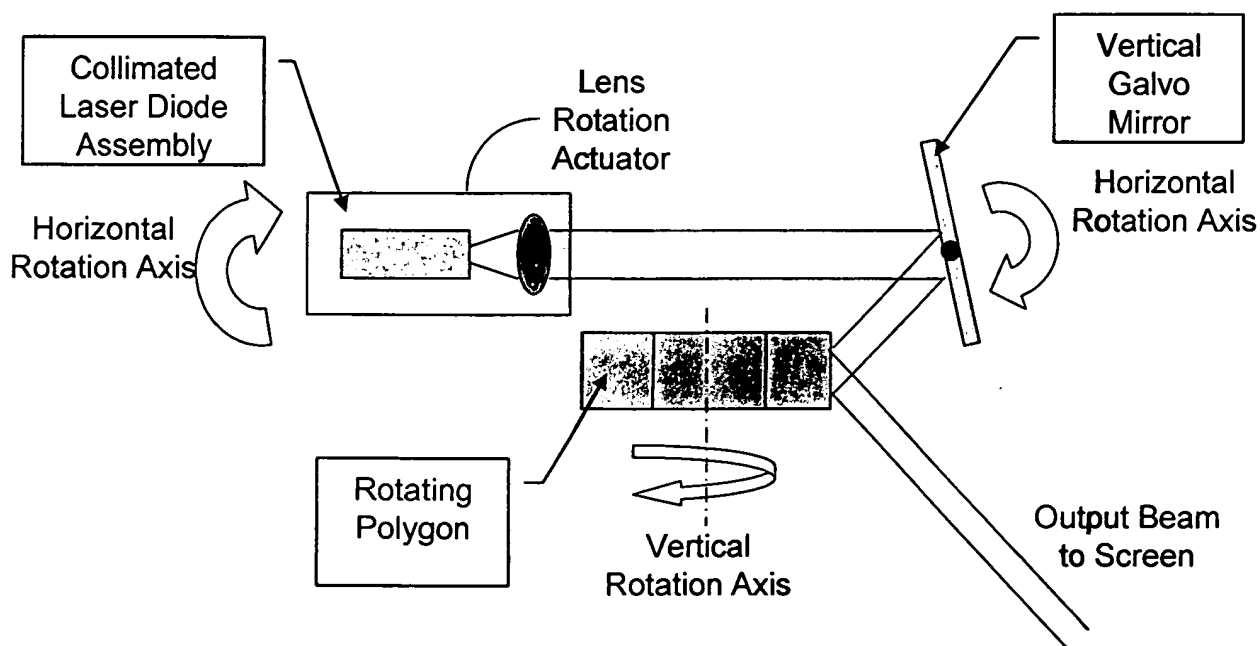


FIG. 49B

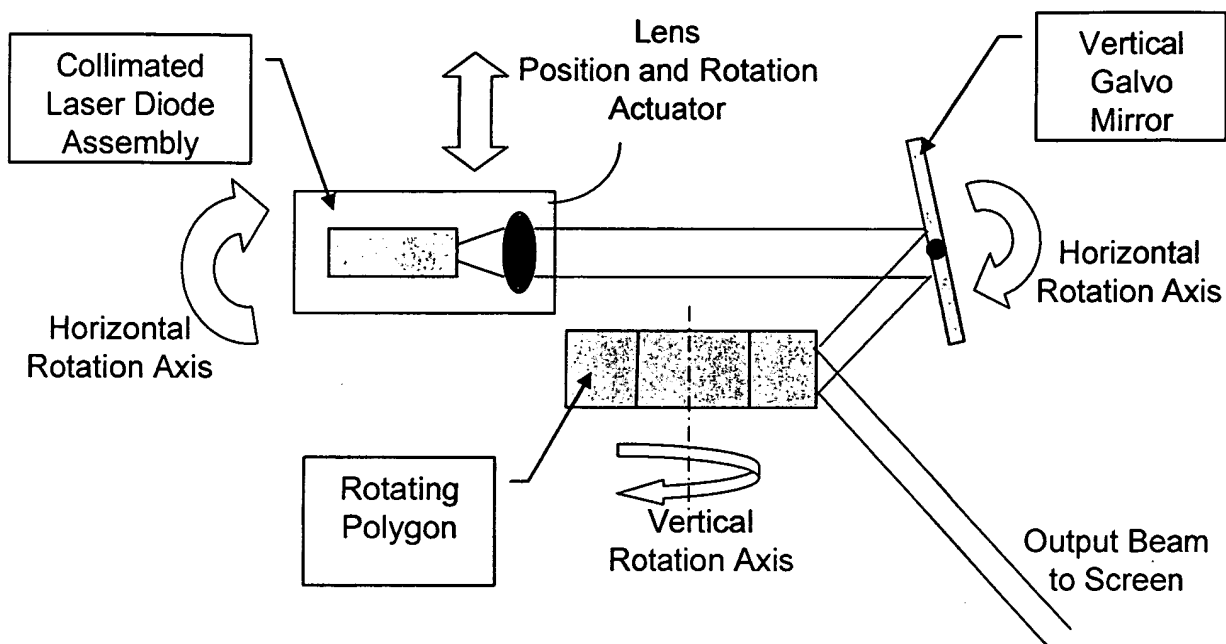
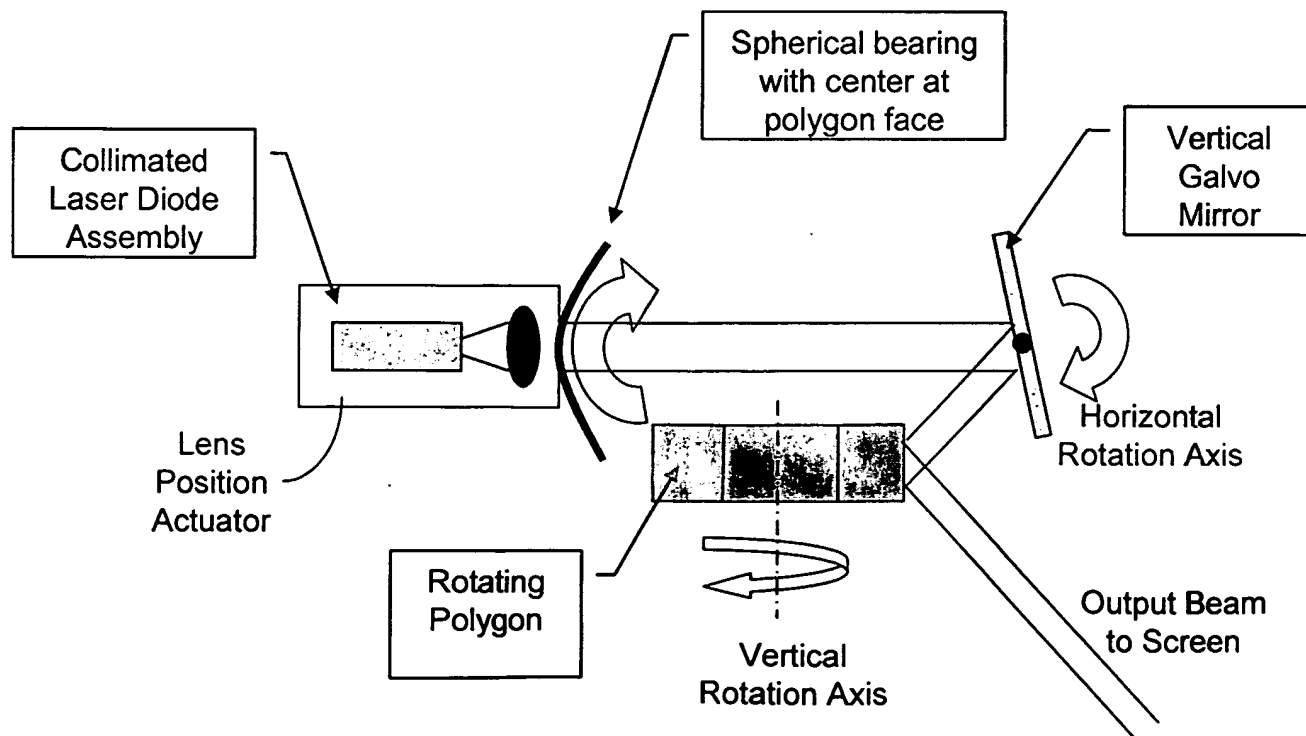
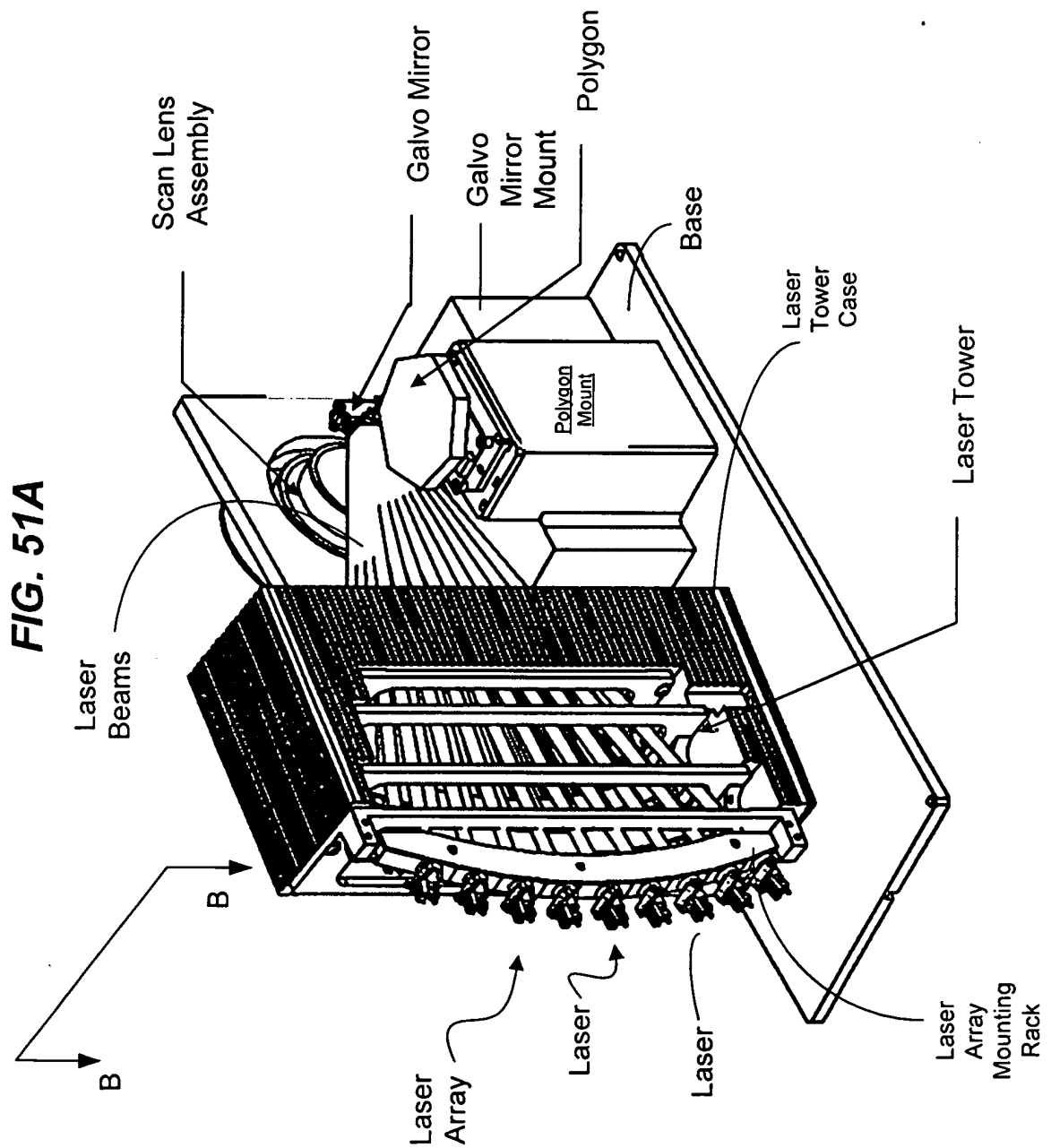


FIG. 50





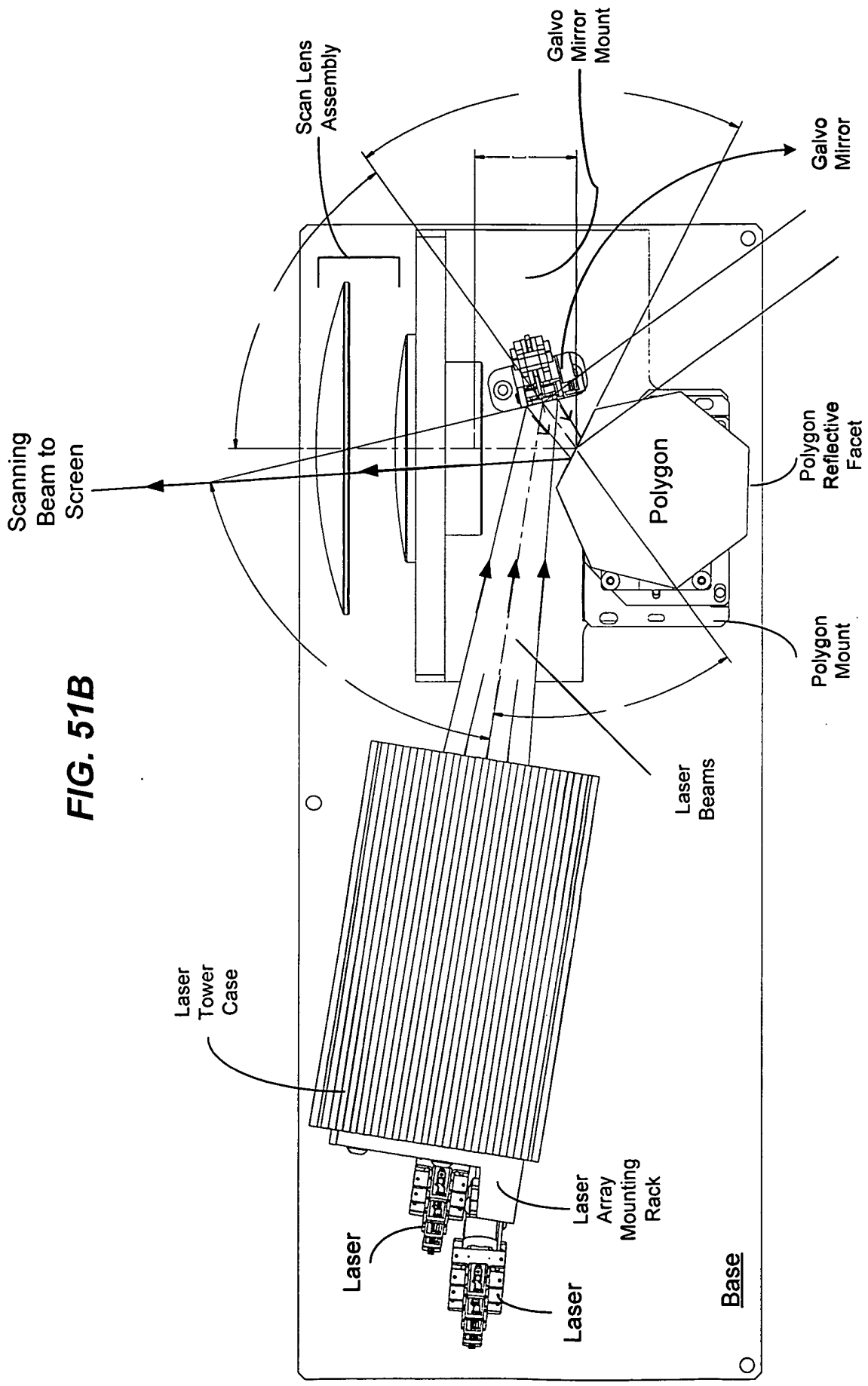


FIG. 51B

FIG. 51C

